

Learning from Past Success: The NPT and the Future of Non-proliferation

JIM WALSH

WMDC

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Postal address: SE-103 33 Stockholm, Sweden
Visitors' address: Regeringsgatan 30-32
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The NPT and the Future of Non-proliferation**

Jim Walsh, Harvard University

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I. Introduction: Three Questions

This paper addresses three questions.¹ First, has the Nuclear Non-proliferation Treaty (NPT) been a success or a failure? Second, what accounts for this success or failure? Third, what do the lessons from the first thirty-five years of the treaty suggest, if anything, about how to address the problem of proliferation and in particular, the post-Cold War and post-9/11 challenges that confront the international non-proliferation regime?

The analysis presented here finds that the NPT has been surprisingly successful. Indeed, it is arguably the most successful arms control treaty in human history. Unfortunately—and strangely—this success has been either ignored or discounted as irrelevant. It will be argued that failure to fully acknowledge and understand the success of the NPT is a potentially dangerous policy error. To understand the treaty's success, the paper looks beyond security and technical factors and instead considers political factors and the way in which the NPT influenced countries' internal decision dynamics. It concludes by looking at the lessons learned and their implications for non-proliferation policy.

Before turning to the question of whether the treaty was a success or a failure, it makes sense to first consider the meaning and importance of “success.”

¹ This paper is based on two talks given at meetings sponsored by the Weapons of Mass Destruction Commission, one in Helsinki, Finland in March of 2005 (also supported by the Finnish Ministry of Foreign Affairs) and another at the NPT Review Conference in May of that same year. The author is indebted to the Commission for its support and to the many colleagues at these and related meetings who offered their thoughts. In particular, Manne Wangborg and Anthony Wier were generous with their comments and ideas.

II. Recognizing and Understanding Success: Why Success Matters

There are at least two reasons why attention to policy success is important. The first is that a focus on success yields certain policy benefits. Policy makers who confront a problem need to make choices from an array of possible remedies and in an environment of limited time, limited resources, and limited information (uncertainty). Policy successes provide decision makers with instruments that are proven to be effective and more certain than untested alternatives. In addition, building on already established success is usually politically easier and more efficient than pursuing new initiatives. This is not to suggest that governments should avoid new policy remedies. Rather, the point is that decision makers should *first* consider what has already worked and whether it makes sense to build on that success.

A second reason for understanding why success is important is that failure to do so entails policy risks. A failure to appreciate the *extent or frequency of success* can lead officials to exaggerate dangers and opt for extreme measures where costs may be high and where effectiveness is doubtful. Even extreme measures may look attractive, however, if dangers appear dire. With respect to proliferation, for example, advocates for missile defence, counter proliferation, and preventive war have argued that the failure of the non-proliferation regime and the inevitability of proliferation make their policies the preferable choice.

Another kind of risk comes from a failure to understand the *causes of success*. Ignoring the causes of success leaves decision makers vulnerable to taking actions that undermine the reasons or conditions for previous success, thus making a bad situation even worse. The United States, for example, has been tempted to pursue a new generation of “bunker busting” or “mini” nuclear weapons in order to deter so-called rogue states.² However, such policies intended to contribute

² Michael Klare, *Rogue States and Nuclear Outlaws*, (New York: Hill and Wang, 1995); Ashok Kapur, "Rogue States and the International Nuclear Order," *International Journal*, 51:3 (Summer 1996), pp. 420-439; Mary Caprioli, and Peter F. Trumbore, "Rhetoric Versus Reality: Rogue States in Interstate Conflict," *Journal of Conflict Resolution*, 49:5 (October 2005), pp. 770-791.

to the general collapse of the non-proliferation regime, may instead result in contribution to proliferation.

A third risk involves systems whose effectiveness depends, at least in part, on the confidence of its members. The NPT is just such a system. The treaty is stronger when member states believe that the treaty is working and that nations can be counted on to abide by the rules. It is weaker when governments believe that the treaty is not working or failing. A perception of failure encourages states to consider alternatives such as hedging and gives pro-bomb advocates an opening to make their case. This is not to suggest that discussions of the NPT should ignore failures and engage in boosterism. Focusing *only* on failure is misleading, however, and runs the risk of generating a spiralling crisis of confidence. In such a spiral, a government begins to pull back from its commitments because of doubts about the treaty, which in turn is taken as evidence that the treaty is weak and encourages other governments to follow suit.

Ignoring success thus carries many risks. Of course, exaggerating success can be dangerous as well. Rather than ignoring or hyping success, what is really required is an objective assessment of the regime. In the next section, the question of success and failure is examined in depth. It begins by examining a point of view that is widely held if not predominant. It then proceeds with a review of the historical record and concludes by considering the standards one might use for measuring success.

III. NPT: Success or Failure?

A. The Conventional Wisdom

For most observers and commentators, there is little debate regarding the success or failure of the NPT: there has been a long running, broad consensus that the NPT a) has failed, b) is on the verge of failure, or c) will inevitably fail with a resulting cascade of proliferation.

³ Mary Thornton, "Is Non-proliferation in Jeopardy? Recommendations for U.S. Nuclear Weapons Policy," *JPIA: Journal of Public and International Affairs*, 13 (Spring 2002), pp. 181-

Sometimes the statements are explicit, as when some commentators have baldly asserted that the NPT has “failed” or is “collapsing.”⁴ As one observer recently noted, “It has become fashionable, yet again, to predict the collapse of the NPT.... The last time such a debate happened was in the aftermath of the Indian and Pakistani nuclear tests in the summer of 1998. Now, North Korea's apparent breakout of the NPT Treaty, and Iran's challenge to the NPT regime are leading to yet another debate about the future of the regime.”⁵ Even the office of the UN Secretary-General has suggested that “we are approaching a point at which the erosion of the non-proliferation regime could become irreversible and result in a cascade of proliferation.”⁶

At other times, the logic of failure is implicit. Typically, it takes the form of predictions that nuclear weapons will proliferate *despite the presence of the treaty*.⁷ Prior to the NPT, there were numerous and infamous predictions of widespread proliferation⁸, and when the treaty was

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⁴ Those using the word “fail” include William C. Martel, “The End of Non-proliferation?,” *Strategic Review*, 28:4 (Fall 2000), pp. 16-21 and Jason D. Ellis, “The Best Defense: Counterproliferation and U.S. National Security,” *Washington Quarterly*, 26:2 (Spring 2003), pp. 119-120, but it is the more moderate William Pfaff who suggested that “the NPT is collapsing.” William Pfaff, “The Nuclear Realities,” *The Advertiser*, September 10, 2005, p. W3. See also Michael McGwire, “The Rise and Fall of the NPT: An Opportunity for Britain,” *International Affairs*, 81:1 (January 2005), pp. 115-140. Not surprisingly, analysts in India, Pakistan, and Israel, who do not want to be punished or constrained by their absence in the NPT, have offered similar views. See for example, Narayanan Komerath, “The Nuclear Truth Triumphs,” *Security Research Review*, 2005, Bharat-Rakshak, <http://www.bharatrakshak.com/SRR/Volume14/komerath.html>; C. Raja Mohan, “On Nuclear Diplomacy, a Window Has Opened,” *Indian Express*, October 19, 2004, <http://www.observerindia.com/analysis/A293.htm>.

⁵ Rajesh Rajagopalan, “Will the NPT Regime Survive?,” *ORF Strategic Trends*, 1:2 (October 6, 2003), Observer Research Foundation.

⁶ *A More Secure World: Our Shared Responsibility*, Report of the Secretary-General’s High-level Panel on Threats, Challenges and Change, (New York: United Nations, 2004), pp. 40.

⁷ Obviously, a prediction that nuclear weapons will spread is a prediction the NPT regime will fail.

⁸ The most widely cited erroneous prediction was John F. Kennedy’s but his view was broadly representative. See *Public Papers of the President of the United States: John F. Kennedy*, 1963 (Washington, D.C.: Government Printing Office, 1964), p. 280 or *New York Times*, March 23, 1963, p. 1. Draft Memorandum for the President from the Secretary of State, “The Diffusion of

presented for consideration, doubts were plentiful. One anonymous official spoke for many when he lamented that...

The Treaty appears in some ways to be a negation of history. All people with the knowledge and resources they needed have progressed through evolutions and revolutions in industry, transport and weapons; from the manual to the machine, from sailing ships to steamers, from the oxcart to the aeroplane, and from the club to gun and bomb.⁹

Despite these worries, the NPT was adopted. What is striking, however, is that predictions of widespread proliferation continued with consistency. Such predictions – as well as benedictions for a dying regime – were most frequent in the aftermath of perceived proliferation crises.¹⁰

After the Indian test in 1974, the Iraq revelations of the early 1990s¹¹, the North Korean stand-off

Nuclear Weapons with and without a Test Ban Agreement," July 27, 1962, Table 1, John F. Kennedy Presidential Library. See also Sir John Cockcroft, "The Perils of Nuclear Proliferation," in *Unless Peace Comes*, in *Unless Peace Comes*, Nigel Calder, ed., (New York: Viking Press, 1968), p. 37. Proliferation, wrote Gallois, was "as irreversible as . . . the generalization of firearms." Pierre Gallois, *The Balance of Terror*, (Boston: Houghton Mifflin, 1961), p. 229.

⁹ X. "Australian Doubts on the Treaty," *Quadrant*, 12:53 (May-June 1968), p. 31.

¹⁰ Predictions of NPT collapse and surging proliferation have not limited to proliferation crises, however. With the end of the Cold War, several scholars of international relations predicted that the end of the superpower rivalry and its bipolar international system would unleash a new wave of weapons proliferation. Benjamin Frankel, "The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation," *The Proliferation Puzzle: Why Nuclear Weapons Spread and What Results*, Zachary S. Davis and Benjamin Frankel, eds., (London: Frank Cass, 1993), p. 37. John J. Mearsheimer, "Back to the Future: Instability in Europe after the Cold War," *International Security*, 19:3 (Winter 1994), pp. 5-49; Stephen Van Evera, "Primed for Peace: Europe After the Cold War," *International Security*, 15:3 (Winter 1990), pp. 7-57. See also Bradley A. Thayer, "The Causes of Nuclear Proliferation and the Non-proliferation Regime," *Security Studies*, 4:3, pp. 519.

¹¹ Several observers suggested that the Iraq case demonstrated that inspections, and by implication the regime, are of limited value. Ruth Wedgewood, National Public Radio, "America and the World," (8:00 pm ET), Transcript # 9513, April 1, 1995; Charles Duelfer, "The Inevitable Failure of Inspections in Iraq," *Arms Control Today*, September 2002; Jason D. Ellis, "The Best Defense: Counterproliferation and U.S. National Security," *Washington Quarterly*, 26:2 (Spring 2003), pp. 121; Charles Krauthammer, "Capitulation in Korea: Clinton's Cave-in Makes a Joke of the NPT," *Washington Post*, January 7, 1994, p. A19.

in the mid-1990s¹², the 1998 South Asian nuclear tests¹³, the discovery of the Khan network, and most recently with the controversy regarding Iran's nuclear behaviour, analysts have solemnly pronounced the demise of the regime and/or warned of a wave of new weapons states.¹⁴

Among the most vocal prognosticators of NPT collapse is the current US government. The White House and its neoconservative theorists have long maintained that the treaty system is at best obsolete and ineffective. They insist, therefore, on the need for a more "forward leaning" or "aggressive" posture, one that includes counter proliferation, preventive war, and missile defences.¹⁵

¹² On North Korea, Robert McNamara refers to a "breakdown" of the regime, resulting in a wave of new weapons states such as Syria, Egypt, South Korea, Taiwan and Japan. For his part, conservative commentator Charles Krauthammer declared that North Korea meant that "NPT is dead." Robert McNamara, "Meeting the Nuclear Challenge: A Personal Perspective," April 25, 2003,

<http://www.eisenhowerinstitute.org/programs/globalpartnerships/safeguarding/mcnamara1.htm>; Charles Krauthammer, "Capitulation in Korea: Clinton's Cave-in Makes a Joke of the NPT," *Washington Post*, January 7, 1994, p. A19.

¹³ The South Asian tests, in particular, were accompanied by predictions of NPT collapse and nuclear proliferation. One former official, warned that "the world will begin to proceed down the path toward widespread nuclear proliferation that we narrowly avoided back in the 1960s." Steve Coll, "The Race Is On -- and May Be Hard to Stop," *Washington Post*, May 29, 1998, p. A01. See also Victor Galinsky, "Nuclear Proliferation After the Indian and Pak Tests," in *Twenty-First Century Weapons Proliferation: Are we Ready?*, Henry Sokolski and James M. Ludes, eds., (London: Frank Cass, 2001), pp. 3-13; Marianne Hanson, "Future Disturbed by Blasts from the Past," *Courier Mail*, June 1, 1998, p.13; John Mearsheimer, "Here We Go Again," *New York Times*, May 17, 1998, p. 17; Thomas W. Lippman and John Ward Anderson, "U.S. Laws Curb Offers To Pakistan; Officials Look for Ways To Prevent Nuclear Test," *Washington Post*, May 28, 1998, p. A25.

¹⁴ Graham Allison, for example, has offered what can only be described as a vintage 1960s prediction of a proliferation debacle. Graham Allison, "The Cascade of Proliferation," *Atlantic Monthly*. 296:3 (October 2005).

¹⁵ On the Bush non-proliferation policy, see U.S, Department of State, "Interview: Under Secretary John Bolton on U.S. Arms Control Policy," August 14, 2001, http://www.usembassy.it/file2001_08/alia/a1081510.htm; John R. Bolton, "The Bush Administration's Forward Strategy for Non-proliferation," *Chicago Journal of International Law*, 5:2, (Winter 2004), pp. 395-404; Jason D. Ellis, "The Best Defense: Counterproliferation and U.S. National Security," *Washington Quarterly*, 26:2 (Spring 2003), pp. 115-133; Sharad Joshi, "Unilateralism and Multilateralism: Analyzing American Nuclear Non-proliferation Policy," *World Affairs*, 167:4 (Spring 2005), pp. 147-161; Andrew Newman, "Arms Control,

While this position represents the extreme end of non-proliferation thinking, much of the underlying logic is widely accepted, i.e., that the diffusion of technological know-how and the persistence of security threats make proliferation inevitable, and no treaty can stop it. This is the same reasoning that provided the premise for 1960s predictions of widespread proliferation. Even the Director General of the IAEA has reportedly declared that “30 countries could have nuclear weapons within the next 10 to 20 years if efforts do not improve.”¹⁶

The main difference between today’s predictions and those half a century ago is that more analysts are willing to acknowledge that the NPT has been useful, and that as a result, fewer states than predicted have joined the nuclear club.¹⁷ A more sophisticated but nevertheless pessimistic contemporary view concedes that the NPT has been successful in the past but concludes that this previous success is irrelevant.¹⁸ According to this school of thought, in a post–Cold War, post–9/11 world of terrorists and “rogue states,” everything has changed.

Proliferation and Terrorism: The Bush Administration's Post-September 11 Security Strategy,” *Journal of Strategic Studies*, 27:1 (March 2004), pp. 59-88.

¹⁶ The prediction is eerily similar to John F. Kennedy’s prediction. “El Baradei Warns Of Nuclear Proliferation,” *USA Today*, December 14, 2005, p. 15. In his defence, the Director General is conditioning the prediction on the premise that “efforts do not improve,” but that is tantamount to saying that given the *current* system, the system will fail dramatically.

¹⁷ This change may be the result of a small but growing number of scholars who have focused on nuclear restraint. See, for example, Mitchell Reiss, *Without the Bomb: The Politics of Nuclear Non-proliferation*, (New York: Columbia University Press, 1988); Mitchell Reiss, *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities*, (Washington: Woodrow Wilson Center Press/Johns Hopkins University Press, 1995); Robert J. Einhorn, Mitchell B. Reiss, and Kurt M. Campbell, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, (Washington, D.C. : Brookings Institution Press, 2004).

¹⁸ One cannot help but recall William James’ three stages of a theory. “First, ... a new theory is attacked as absurd; then it is admitted to be true, but obvious and insignificant; finally it is seen to be so important that its adversaries claim that they themselves discovered it.” As regards the success of the NPT, we are somewhere between stage one and stage two. William James, *Pragmatism*, (New York: Meridian, 1907), pp. 131-132.

Indeed, what is striking about the conventional wisdom is its dogged persistence. In one form or another, it has represented the consensus opinion for decades.¹⁹ As one observer noted, "almost all the published predictions of the spread of nuclear weapons have been too pessimistic."²⁰

B. Evidence and Arguments for Success and Failure

The overwhelming and historically consistent consensus of scholars and policy makers is that the NPT and the regime has failed or is failing. But are they right? This section considers the arguments from both sides.

B1. Evidence and arguments for success.

There are several types of arguments that support the view that the NPT has been a success. The first type is statistical.

Statistical

One set of statistics looks at nuclear outcomes in the aggregate. In particular, one can point to a) the declining rate of proliferation over time, b) the small percentage of countries that became nuclear weapons states compared with the number of countries that considered doing so, and c) the declining number of countries interested in acquiring nuclear weapons.

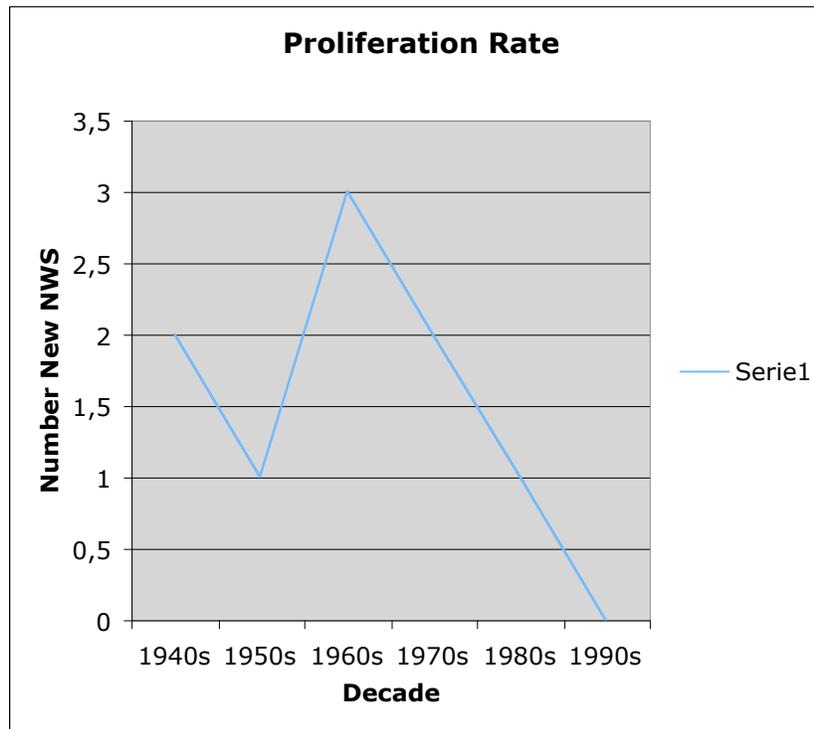
Proponents cite this record of restraint and make the additional point that these positive developments follow or coincide with the establishment of the treaty.

¹⁹ See, for example, Matthew Woods, "Inventing Proliferation: The Creation and Preservation of the Inevitable Spread of Nuclear Weapons," *Review of International Affairs*, 3:3 (Spring 2004), pp. 416-442.

²⁰ George H. Quester, "The Statistical 'n' of 'nth' Nuclear Weapons States," *Journal of Conflict Resolution*, 27:1 (March 1983), p. 167. So far, I have found only two exceptions: Chafetz, who predicts that pressures for proliferation will decrease in the years ahead and Donald Brennan, who at a conference in 1966, said that he would "bet even money that the numbers of nuclear powers would not increase in the next ten to fifteen years." Glen Chafetz, "The End of the Cold War and the Future of Nuclear Proliferation: An Alternative to the Neorealist Perspective," *The Proliferation Puzzle: Why Nuclear Weapons Spread and What Results*, Zachary S. Davis and Benjamin Frankel, eds., (London: Frank Cass, 1993), p. 128; Stanley Foundation, *Proliferation Unlimited: A Strategy for Peace*, [Report of a conference held March 10-11, 1966 in Washington, D.C.], (Muscatine, Iowa: Stanley foundation, 1966), p. 24.

Consider, for example, the rate of proliferation. Measured as number of new nuclear weapons states per decade, the rate of proliferation peaked in the 1960s and began to decline in the 1970s. Perhaps not coincidentally, the NPT came into force in 1970.

Box 1. Rate of Proliferation, 1945-2000
(New Nuclear Weapons States Per Decade)



Sceptics could rightly point out that the chart does not include North Korea. Moreover, it might be argued that the chart, while dramatic, is an artefact of small numbers. With so few cases, one cannot be especially confident in the conclusions.

North Korea is not reflected in the chart, in part, because their nuclear status is unclear. Most analysts believe that, consistent with North Korean claims, the Democratic People's Republic of Korea (DPRK) possesses at least one device. On the other hand, some long-time observers

would not be surprised if it turned out that Pyongyang, in fact, had no nuclear weapons. More importantly, the DPRK has repeatedly suggested that it is willing to renounce its arsenal, in which case the corrected chart would nevertheless exhibit a declining rate of proliferation. Indeed, as Matthew Bunn has observed, even if one includes the DPRK as a weapons state, there are the same number of nuclear weapons states today as there were 15 years ago.²¹

It is certainly true that the chart reflects a small number of cases, but that, of course, is the point. The very fact that there are a small number of cases suggests that the treaty has been successful. Regardless, one has to use the data that is available, and it points to a thirty-year decline in the rate of proliferation.

As discussed above, the number of countries that became nuclear weapons states is relatively small, but evidence of nuclear restraint is not only found in this small *number* of states but in the modest *percentage* of countries that acquired nuclear weapons. A much larger number of countries considered, inherited, or acquired a nuclear option but maintained or reverted to a non-nuclear status. Indeed, 75% of countries that could have become nuclear weapons states are instead non-nuclear weapons states.

**Box 2. Potential Nuclear Weapons States That
Remained Non-Nuclear**

Argentina	Indonesia	S. Korea
Australia	Iraq	S. Africa
Belarus	Italy	Sweden

²¹ Personal communication with Matthew Bunn, December, 8, 2005.

Brazil	Japan	Switzerland
Canada	Kazakhstan	Taiwan
Egypt	Libya	Turkey
Germany	Norway	Ukraine
Greece	Romania	Yugoslavia

A final statistical measure is the number of countries that aspire to become nuclear weapons states. Contemporary analysts focus on North Korea and Iran, but how does that compare with previous decades? There are, in fact, *fewer states seeking nuclear weapons today than at any point since WWII*. The 1960s had the most nuclear aspirants. Indeed, the number of countries that were interested in acquiring nuclear weapons in the 1950s and 1960s is roughly double the total number of countries seeking nuclear weapons for the subsequent three decades combined. As threatening as it may seem that a DPRK or Iran might seek to be nuclear weapons states, policy makers from decades past found themselves in a far more threatening situation in terms of proliferation.²² Simply put, since the NPT, fewer countries have had nuclear ambitions.

Behavioural

A second set of arguments draws on information about the behaviour of particular countries. Take, for example, the behaviour of countries that wanted to keep a nuclear weapons option. In general, these countries did not join the treaty immediately, despite the widespread belief at the time that joining the treaty would make the import of nuclear technology substantially easier. In other words, countries that had an interest in nuclear weapons did not view the treaty as just a bit

²² In context, it is difficult to imagine a more threatening possibility than the 1960s concern that China under Mao would get the bomb. Mao had said that nuclear weapons were paper tigers, that China could fight and survive a nuclear war, and that he would share nuclear weapons technology with other poor countries. In response, US policy makers explored a preventive nuclear attack in concert with the Soviet Union and considered sharing of US nuclear weapons with India or Japan in order to balance against the Chinese bomb. On the perceived threat and American policy options, see Francis J. Gavin, "Blasts from the Past: Proliferation Lessons from the 1960s," *International Security*, 29:3 (Winter 2004), pp. 100-135; William Burr and Jeffrey T.

of paper. They viewed it as a threat to a future nuclear weapons option and so avoided the treaty. Some of these countries, such as India and Pakistan, went on to build nuclear devices. Others remained outside the treaty until such time as subsequent governments were willing to renounce their nuclear ambitions.

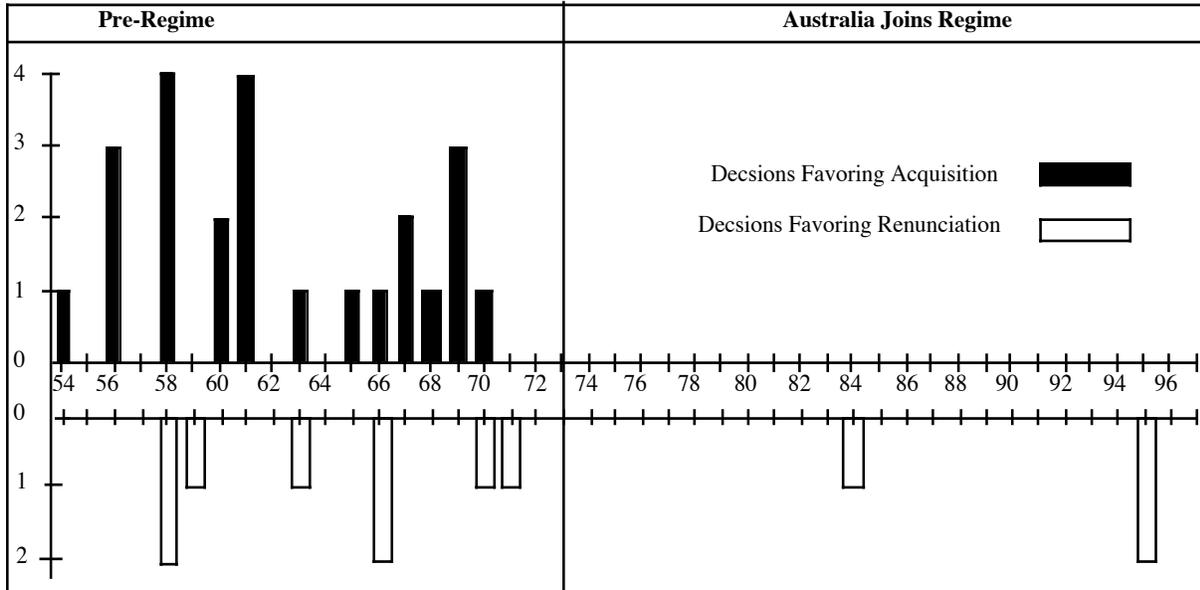
Consider the examples of Egypt and Australia, both of which repeatedly sought the acquisition of nuclear weapons.²³ Once joining the treaty, however, their nuclear acquisition activities went to near zero.

The chart below maps nuclear decision-making in Australia from 1954 to 1998. The black bars indicate the number of pro-acquisition decisions in a given year. The white bars reflect the number of pro-renunciation decisions. “Decisions” consist of official governmental actions such as commissioning a study on the feasibility of building nuclear weapons, asking an ally for the transfer of nuclear weapons, or signing an arms control treaty. As the chart indicates, Australia’s government made a number of pro-nuclear decisions for decades, but that came to an abrupt end once the government ratified the NPT in 1973.

Richelson, “Whether to “Strangle the Baby in the Cradle: The United States and the Chinese Nuclear Program, 1960-64,” *International Security*, 25:3 (Winter 2000-2001), pp. 54-99.

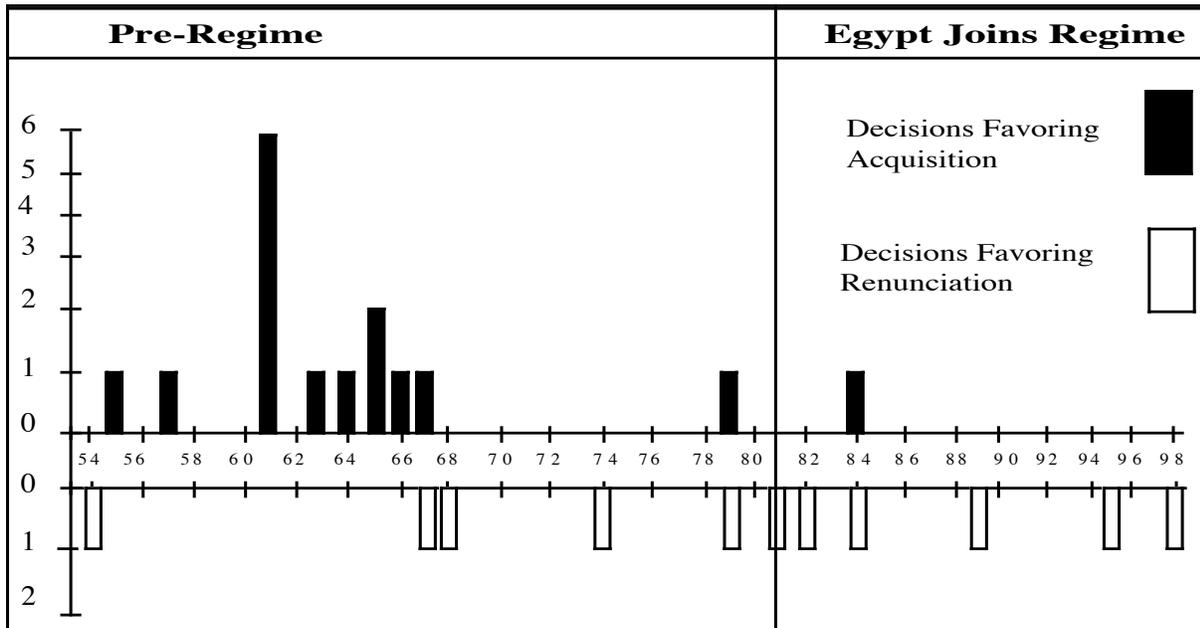
²³ Jim Walsh, *Bombs Unbuilt: Power, Ideas, and Institutions in International Politics*, (Cambridge, MA; MIT Doctoral Dissertation, May, 2000); Jim Walsh, "Surprise Down Under: The Secret History of Australia’s Nuclear Ambitions." *Non-proliferation Review*, 5:1 (Fall 1997), pp. 1-20.

Box 3. Nuclear Decision Making in Australia, 1954-1998



A map of Egypt's nuclear decision making between 1954 and 1998 reveals a similar pattern. Prior to Egypt's 1981 ratification of the NPT, Cairo made numerous pro-acquisition decisions. Following ratification, that number goes nearly to zero. (The exceptions revolve around the activities of Minister of Defence who was later sacked by President Mubarak.)

Box 3. Nuclear Decision Making in Egypt, 1954-1998



This pattern can be observed in other states such as well Sweden, Germany, Italy, Canada, and others. While not universal, the dynamic is strongly representative of state behaviour. Once countries ratify the NPT, their pro-acquisition activities go to zero or decline precipitously. (The important exceptions of Iraq, the DPRK, and Libya will be discussed in a later section.)

Discourse

A third type of argument points to contemporary discourse on proliferation. In the 1950s and 1960s, leading figures in the United States and elsewhere, viewed nuclear weapons as “normal,” i.e., weapons that the militaries of most industrial states would incorporate into their forces. It was expected that not only would countries acquire nuclear weapons but that tactical nuclear weapons would be used in limited wars. Today, countries accused of seeking nuclear weapons are called “rogue states.” In other words, they are not the norm; they are outliers—the exceptions that prove the rule. The mental and normative conception of proliferation changed dramatically in the decades following the NPT.

Institutional

A fourth set of arguments and evidence focuses on the regime itself, and in particular on various institutional indicators regarding the health of the regime. There are several measures that suggest that the NPT has gotten progressively stronger over time. To begin with, more and more countries have joined the regime—so many that it now has almost the same number of members as the United Nations itself. This is a claim that few international conventions can make.

It might be argued, however, that large membership may not mean much, if membership is easily acquired and does not require that a country actually alter its behaviour. Even if one sets aside the fact that renouncing the most powerful weapon in human history is not exactly a trivial decision for many governments or that safeguards carry costs for member states, other aspects of the NPT point to growing strength rather than weakness. First, the safeguards regime has gotten progressively stronger over time—a process that has made it more intrusive, more demanding, more costly, but also more effective. A second and related process has been the development of new non-proliferation instrumentalities—from the interviewing of nuclear scientists to the use of environmental sampling.

Here again, sceptics might respond that these innovations happened in response to regime failures, e.g., full scope safeguards following the 1974 Indian test or the Additional Protocol following the revelations about Iraq's nuclear program in the early 1990s. It is a fair argument, but in this case, the objection actually proves the point: the system's response to crisis was the development of new strength rather than collapse. Damage followed by repair and growth is usually associated with robust systems. Failing systems, in fact, do not respond to challenges and therefore grow weaker and die.

A final indicator of the regime's increasing rather than declining strength is the growing political significance of the International Atomic Energy Agency (IAEA). Today, if the IAEA issues a finding that a country is violating its safeguards agreement, it has major political and policy consequences. It is a result that most states will vigorously seek to avoid. It is also a result that the United Nations Security Council and the major powers will find difficult to ignore even if they prefer to do so. Granted, in the Iraq-case the IAEA could not stop a superpower from going

to war in the name of non-proliferation—a result no international organization or country could have accomplished—but the agency was strong enough to issue a finding that ran contrary to the desires of the world’s only superpower. Indeed, it is difficult to name many, if any, international organizations that have the same power to affect national policy as the IAEA.

Taken together, these institutional measures of health and weakness are strikingly inconsistent with the portrait of the NPT as failing or near collapse. If the treaty system were failing, one would not expect more countries to be joining the treaty, stronger and evolving inspection instrumentalities, and increasing political influence for the agency that implements the treaty. If one adds the institutional indicators to the statistical, behavioural, and discourse trends, the result is a very powerful and consistent picture of a regime that has had a remarkable effect on nuclear outcomes.

B2. Evidence and arguments for failure.

Where some see success, others see failure. Critics of the NPT’s performance tend to cite at least one of four arguments. The first is the continued existence of nuclear-weapons’ states in and outside the treaty. A second concerns cheating, and in particular the cases of Iraq, the DPRK, Libya, and Iran. The third is that the treaty is ill equipped to handle the threats posed by non-state actors, especially terrorists and black marketeers. The final critique concerns the treaty itself, namely, its lack of enforcement provisions, its withdrawal clause, and its “loopholes” regarding bomb-relevant fuel cycle technology.

Continued Existence of Nuclear Weapons States

It is certainly true that nuclear weapons states continue to exist. Of course, the five “official” nuclear weapons states acquired these weapons *before* the treaty and the other three unofficial nuclear weapons states did *not join* the treaty. Most observers interpret Article VI as obliging the five NPT nuclear-weapon states to eliminate their nuclear stockpiles, and even the most fervent treaty supporter would have to concede that is unlikely for the foreseeable future. Even though weapon stockpiles in the United States and Russia have declined in recent years, these reductions seem unrelated to the states’ NPT commitments. Indeed, there are signs that some

elements within the weapons states wish to abandon this obligation or give even greater political and military priority to their nuclear arsenals. In short, the NPT has not successfully resulted in disarmament.

Cheating by NPT Member States

One also cannot ignore the record of cheating on the part of some NPT members. While most countries did not use their treaty membership as a vehicle for support of a covert weapons program (see above), it is apparent that Iraq and the DPRK did. Moreover, it is clear that Iran engaged in a broad program of concealment in violation of its safeguards obligations and that Libya also acted in direct contravention to its safeguards commitments.

Still, the issue of cheating is not uncomplicated. As the Iraqi Survey Group reported, it was fear of NPT and Security Council non-proliferation inspections that led the Hussein government to abandon its nuclear program in the early 1990s. It was IAEA inspectors who, in the course of carrying out their safeguards responsibilities, discovered the discrepancies in the North Korean declarations. (Indeed, North Korea has announced that it is willing to renounce its nuclear arsenal and wants to rejoin the NPT and submit to IAEA inspection.)

Iran and Libya present somewhat different cases. Some observers of the Iranian program believe that Tehran seeks a nuclear-weapon capability but does not want to openly violate the NPT and become another North Korea. Instead, it is seeking to provide “objective guarantees” concerning its program and plans to act in accordance with the letter, if not the spirit, of the law. Libya’s activities were not discovered by the IAEA, nor was the renunciation of the program engineered by agency officials. Nevertheless, it has renounced its program and is seeking to regain its status as a treaty member in good standing. (It is also unclear whether, in the absence of British intervention, Libya would have become a nuclear-weapon state even with its procurement program.)

Indeed, with the (likely) exception of the DPRK, none of the cheaters have actually become nuclear-weapon states, and the DPRK says that it hopes to give up its program. Moreover, the

legal basis for discovering and acting against these programs has been the treaty itself. What is striking, in fact, is that despite these transgressions (and the South Asian nuclear tests), there has been no rush to nuclear weapons. No country is anxious to become the next North Korea, and no country has spoken out in defence of North Korea's violations.

Terrorism and Black Markets

Regime critics are right to suggest that the NPT was not designed to address the threats posed by terrorists or nuclear black markets. Still, it has to be said that a larger number of nuclear weapons states would increase the risk of both nuclear terrorists (who might receive or steal material from these states) and black marketeers (who might make use of a state program in the same way that the Khan benefited from the Pakistani program). Indeed, it is hard to imagine that a similar network that was wholly *unconnected* to a weapon state would have been as successful.

It is also worth noting that the basic defence against nuclear terrorism—securing nuclear material—is a logical extension of material accounting and other practices associated both with safeguards and with other, related parts of the regime, e.g., the Convention on the Physical Protection of Nuclear Material and export control efforts. This is not to suggest that current efforts are up to the task. They are not. Rather, the relevant fact here is that the NPT has developed institutions, instrumentalities, and political understandings that can help facilitate policies that are required to address these challenges.

Treaty Loopholes

A final complaint about the NPT and an alleged reason for its failure relates to the treaty's provisions—both what they include and what they do not include. There is, for example, no enforcement provision. Article X permits withdrawal. The treaty, by custom, also permits states to acquire enrichment and reprocessing technologies that could enable a short sprint to the bomb.

The lack of enforcement provisions has been a topic of particular interest to American analysts, where it is often seen as a critical flaw—in the words of one study, an “Achilles heel.”

Invariably, these critics want to see a more muscular regime and, in some cases, they want

enforcement mechanisms that approach automaticity. There are numerous reasons to doubt the wisdom of “automatic” solutions, and proponents of such systems fail to explain how such measures would be adopted by a sceptical international community. What is most relevant, however, is the fact that the NPT has *achieved the success described above without an explicit enforcement clause*.

Have transgressors gone unpunished? Hardly. Iraq and North Korea have been subjected to political penalties, economic sanctions, and the threatened or actual use of force. (The case of Iran is comparatively recent and still in the making.) The absence of an explicit enforcement clause has meant that enforcement has fallen to the United Nations or bilateral responses by individual states. While lacking in uniformity, this structure has meant that different remedies have been tailored for different cases.

Finally, even robust enforcement provisions would not enable the IAEA to act against states outside the treaty, e.g., the Indian and Pakistani nuclear programs. The UN and individual states will continue to have to play an active role in enforcement even if the NPT had an enforcement provision. Indeed, as all students of international organizations recognize, the whole notion of IAEA enforcing rules *independently* of its member states is naïve. The agency is only as strong as the political will of its members, and it is those members who already possess the responsibility for enforcement.

Another concern about the treaty is Article X, the withdrawal provision. North Korea’s withdrawal and the possibility of Iran’s withdrawal from the NPT have spurred questions about the adequacy of this provision. Some member states want to make it more difficult to withdraw. Others have suggested that withdrawal should carry certain obligations such as the return of nuclear technology acquired during NPT membership. This is a useful conversation and may result in ideas that strengthen the regime. Still, it would be a mistake to consider the current withdrawal language a fatal flaw.

From a historical perspective, the withdrawal provision served a very useful purpose. At the dawn of the regime, joining the NPT was not uncontroversial. There were heated debates in many capitals about the wisdom of signing the NPT. Treaty opponents cited a long list of reasons why the treaty would have unwelcome consequences, everything from the need to keep a nuclear option to concern about foreign spies (qua agency inspectors) running around stealing economic and military secrets. Treaty proponents had a powerful answer: even if these concerns were valid, the country could always exercise its Article X rights and withdraw from the treaty. The withdrawal provision took the sting out of many of the opponents' arguments and helped pave the way for NPT membership. Today, membership is less of an issue, given the near universal subscription to the treaty, and so a discussion about withdrawal is probably appropriate.

Nevertheless, the issue should be kept in perspective. Despite the passage of over half a century, only one state has exercised the withdrawal option—and now that state says it wants to rejoin the treaty.

By far the most serious concern about the NPT relates to the concept of peaceful uses and the ability of states to acquire fuel cycle technologies and achieve a virtual nuclear weapons capability. This issue has always been a concern, but it has reached particular prominence in recent years given the case of Iran and its undeclared procurement and development activities. Many, including the Director General of the IAEA and the President of the United States, have called for changes in fuel cycle policy.

The spread of enrichment and reprocessing technologies is, in fact, a major threat to non-proliferation and to the regime. The treaty had a similar problem with respect to Article V and peaceful nuclear explosives (PNE's). Though the treaty guaranteed a nation the right to PNE's, states parties arrived at an unwritten political consensus that this right would not be exercised. A similar remedy may be required here, but it will be much more difficult under current conditions and, in any case, achieving a similar consensus will take time. Unfortunately, the same is also true for the other proposed remedies to this problem, such as international or multilateral

ownership of enrichment and reprocessing or a top down denial of technology by advanced industrial states.

In sum, there are legitimate complaints and concerns about the treaty, but many of the reasons cited for why the NPT is fatally flawed are overdrawn. The problems of enforcement and withdrawal, while worthy of discussion and new thinking, have not fundamentally impeded the success of the treaty. The same is true of the issue of the fuel cycle, but that provides little comfort. Of all the worries about the treaty, the issue of the fuel cycle is the most dangerous and perhaps the most difficult to resolve in the current international political climate.

C. Measuring Success and Failure

After reviewing the arguments for success and failure, it is easy to see merit in the positions of both sides. Overall, the treaty appears to have restrained the pace of proliferation to an extent unimaginable by scholars, policy makers, or even the diplomats who negotiated the treaty. On the other hand, the weapons states have not honoured their Article VI obligations, states within the treaty have cheated, and access to fuel cycle technology may subvert the core objectives of the treaty. So what are we to make of these crosscutting results?

First, one must ask, “What is the basis for judging success?” Success or failure cannot be measured in the abstract. It must be defined by some standard.

Most NPT critics appear to believe that perfection is the appropriate standard. By this measure, the identification of a single cheater or one flaw qualifies the treaty as a failure.

A second basis for measurement might be called the “pragmatists’ standard.” What is important here is not perfection, but rather how well something performs compared to how it could have reasonably been expected to perform. In short, did the NPT beat expectations? Alternatively, one could compare it with the other alternatives that were available at the time. This requires counterfactual reasoning, which can be difficult. Yet another variant of the pragmatic standard

also employs counterfactual reasoning. It asks the evaluator to imagine a world without the NPT and then to consider whether the world would have been better off or not without the treaty.

A third standard, one typically favoured by social scientists, is performance compared to other domains. So for example, how does NPT performance compare with other treaties in general or other arms control treaties in particular?

No standard is without its flaws. The perfection standard is problematic on its face, given the absence of perfection in any human endeavour. Moreover, the perfection standard would seem most likely to the mistakes associated with a failure to understand success.

The pragmatist and “comparison with comparable phenomena” standards are also not without problems. Beating expectations may be too low a standard, and the utility of the “comparable phenomena” standard depends on the quality of the referents. For some events or experiences, there are few comparable phenomena, and comparisons on the wrong dimensions may be more misleading than helpful. Both the pragmatism and comparison standards also fail to give full weight to the objectives of the performance being evaluated. Given a goal of preventing nuclear proliferation or ultimately, nuclear use, beating expectations or performing better than other treaties may be insufficient given the importance of the objective and the significance of the exceptions.

As there is no one ideal standard of evaluation, what can be said about the NPT? Obviously, like everything else in life, it fails the perfection standard, but it does quite well when judged by the other standards. It certainly beat expectations: virtually every policy maker and analyst since 1945 has wrongly predicted the future of proliferation by overestimating the degree to which nuclear weapons would spread. In addition, no one predicted that states would give up their nuclear weapons or that the interest in nuclear weapons would decline over time. Moreover, it is hard to imagine that the world would have fared better without the NPT or that other contemporary alternatives (e.g., selective proliferation to China and Japan or the Multilateral Force) would have generated a superior outcome.

Even when considering that the goal of stopping nuclear proliferation carries higher than average stakes and has a low tolerance for exceptions, the NPT does well. Judged by outcomes, no NPT state with the possible exception of the DPRK has acquired nuclear weapons. It is difficult to think of a similar level of success enjoyed in any domain related to national security—or in policy in general for that matter. This is not to minimize the challenges, particularly relating to the fuel cycle. Moreover, as television ads for investment companies warn, “past success is not a guarantee of future performance,” but it would seem difficult to ignore the striking success of the NPT.

D. Why Is the NPT’s Success Ignored?

The NPT’s contribution to nuclear restraint is arguably one of the 20th century’s biggest—and unheralded—public policy achievements. This success raises a number of questions. First and foremost, it raises the question of causes. What accounts for the treaty’s success? That fundamental question is addressed in the next section. Here the focus is instead on the apparent disconnection between performance and perception. Why do policy makers and scholars continue to emphasize failure in the face of unprecedented and unexpected success?

The focus on failure is pervasive and consistent over time, i.e., it is *systematic*. Are there reasons that explain this bias? What does the bias tell us about ourselves and our theories of international behaviour?

Explaining the systematic bias on the part of policy makers would appear to be fairly straightforward. Decision makers understandably tend to concentrate their attention on present and near-term dangers, not on comparing relative risk over time. And as with the media, there is a natural preoccupation with danger rather than success. In the triage of policymaking, a danger (something not working) will receive greater attention than a success (something that is working).

More speculatively, it might be said that inevitability arguments (e.g., it is inevitable that nuclear weapons will spread, it is inevitable that country X will acquire nuclear weapons) are especially seductive. It may be that the strong premises (e.g., capability will spread over time, countries face security threats) combined with a simplifying frame (inevitability) are hard to resist.

Issues of political self-interest may also contribute to a pre-occupation with faults and failures. Regime critics, who would prefer that states give increasing attention to non-regime based policy instruments such as defences and preventive war, are naturally going to challenge the value of the treaty. In the run up to the 2003 war in Iraq, for example, American officials repeatedly questioned the effectiveness of the regime as part of their public case for preventive war. Paradoxically, regime advocates indulge in similarly negative rhetoric. In order to muster political support for the treaty, they claim that the NPT is in danger of collapse or that a crisis is at hand. Thus, both critics and proponents have their own reasons for emphasizing failures rather than successes.

The apparent bias of scholars is more difficult to explain. Part of the reason may be related to the fact that for most of the nuclear age, the focus in security studies has been on the U.S., the Soviet Union and to a lesser extent on the other nuclear weapons states. In other words, the primary cases in the field are all countries that acquired nuclear weapons (non-proliferation failures), not countries that abstained from nuclear weapons (non-proliferation successes). In the last ten years, there has been more attention paid to the nuclear histories of other countries and somewhat more attention to regime successes, but the change has been limited.

Alternatively, it may have something to do with the evolution of the field of international relations. Scholars drawn to the Realist school of international relations may be more likely than others to pursue work in security studies. They, in turn, come to the topic with a firmly entrenched scepticism about the importance of international institutions. Looked at from a different angle, it may be that Institutionalists tend to go into the field of political economy rather than security studies. The post-modernists, for their part, have not had much to say about the issue.

Of course, these are just musings and guesses, but the disconnect is sufficiently wide and the topic sufficiently important that it is probably worth pursuing the question. An answer might tell us a lot about ourselves as analysts and help us avoid similar errors in the future.

IV. What Accounts for the Success of the NPT Regime?

With the success of the NPT being largely ignored, it is not surprising that the causes of that success have also received short shrift. Regime sceptics have contended that the NPT is just a piece of paper, subject to the whims of great powers and vulnerable to cheaters. Regime advocates, while not offering a clearly stated theory of success, implicitly suggest that the power of the NPT is the power of international law and international public opinion.

In this section, these claims are reviewed, and both are found wanting. Critics fail to appreciate the constraining effect of the NPT, and advocates provide a narrow explanation for a dynamic that goes well beyond a respect of the law. It will be argued that the power behind the NPT is not legal but rather institutional and political.

Before explaining why the NPT has enjoyed unexpected and little appreciated success, it is useful to first step back and consider the broader context of nuclear restraint. This restraint presents somewhat of a puzzle. In solving this puzzle, one can better understand how the NPT achieved its goals.

A. The Puzzle

A major mystery confronting any student of international affairs is that virtually every indicator and historical development since 1970 would suggest that nuclear weapons should have spread faster than they have.

Consider the period between the birth of the NPT and the collapse of the Soviet Union. During these two decades, civilian nuclear technology spread, and thus the technical barriers to

acquisition became progressively lower. States with nuclear weapons paid few if any costs for their status as nuclear weapons states. (The possible exception might be India, which endured modest but relatively short-lived penalties following its 1974 test.) If anything, nuclear-weapon states enjoyed or were perceived to enjoy benefits from their nuclear weapons status, including everything from increased prestige to enhanced political power (e.g., permanent seats on the UN Security Council). Moreover, as was discussed in previous sections, the NPT seemed to suffer from a number of important flaws: the absence of an enforcement provision, weak verification, and a withdrawal clause that would permit countries to acquire nuclear technology and then renounce their obligations. Most important of all, the treaty did not address the underlying security motivations that were and are widely believed to fuel the spread of nuclear weapons.

The puzzle, plainly put, is thus the following: *How could a treaty with no enforcement, weak verification, and no ability to remove or resolve security threats be so successful?*

Now consider the 15 years since the end of the Soviet Union. If anything, the puzzle becomes even stronger. All of the previously listed problems persisted (spreading technology, flaws in the treaty, etc.), but new pressures have accrued that should have portended greater proliferation. Following the end of the Cold War, several scholars of international relations predicted that the end of the stable bipolar international system would bring with it a rash of proliferation. These predictions were made even before it became apparent that there were hundreds of tons of unsecured fissile material in the former Soviet Union.

This period also witnessed the first Gulf War, the lesson of which—according to a leading Indian official—was that the only way a country could protect itself from the United States was through the acquisition of nuclear weapons. The post-1990 period was also marked by the well-publicized transgressions in Iraq and North Korea, the South Asian atomic tests, and the discovery of a nuclear black market based in Pakistan.

If one had told the framers of the NPT that their treaty would have to survive in such a hostile environment, even the optimists might have blanched. How could the treaty survive, let alone succeed, in such a world?

B. Explaining the Puzzle: Potential Explanations

To explain the puzzle of success, one could turn to a number of traditional explanations. Several of the explanations look beyond the NPT and the regime to account for nuclear restraint. It has been suggested, for example, that superpower alliances like NATO and the Warsaw Pact curtailed the spread of nuclear weapons.²⁴ Others point to superpower pressure, i.e., threats by the superpowers that persuaded or compelled states to abandon their nuclear ambitions. Still others point to the role of supply-side constraints.²⁵ The most common regime-related explanations tend to emphasize two factors: a) the salutary effects of a growing international

²⁴ On the positive effects of security guarantees, see Frankel, "The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation," pp. 37, 46; Kenneth N. Waltz, "The Spread of Nuclear Weapons More May Be Better," *Adelphi Papers*, No. 171, (London: IISS), Autumn, 1981, pp. 78-79; Kenneth N. Waltz, "More May Be Better," *The Spread of Nuclear Weapons*, Scott D. Sagan and Kenneth N. Waltz, eds., (New York: W.W. Norton & Company, 1995), p. 42; Stephen Van Evera, "Hypotheses of the Causes of the Rate of Nuclear Proliferation," Unpublished paper, March 4, 1976, p. 6; Thayer, "The Causes of Nuclear Proliferation and the Non-proliferation Regime," p. 503; see also Greenwood, Potter, and Meyer in Stephen M. Meyer, *The Dynamics of Nuclear Proliferation*, (Chicago: University of Chicago, 1984), pp. 68, 102.

²⁵ On denial as a non-proliferation tool, see Peter Clausen, "U.S. Nuclear Exports and the Non-proliferation Regime," in *Limiting Nuclear Proliferation*, Jed C. Snyder Samuel F. Wells, eds., (Cambridge: Ballinger, 1985), pp. 183-212; Victor Galinsky, "Restraining the Spread of Nuclear Weapons: A Walk on the Supply Side," in *Limiting Nuclear Proliferation*, Jed C. Snyder Samuel F. Wells, eds., (Cambridge: Ballinger, 1985), pp. 255-283; C. Raja Mohan, "Why Nations Go Nuclear: An Alternate History," in *Nuclear Proliferation in the 1980s: Perspectives and Proposals*, William Kincaid and Christopher Bertram, eds., (New York: St. Martin's Press, 1982), p. 38; William Potter, "Soviet Nuclear Export Policy, in *Limiting Nuclear Proliferation*, in *Limiting Nuclear Proliferation*, Jed C. Snyder Samuel F. Wells, eds., (Cambridge: Ballinger, 1985), pp. 213-252. For a critique of denial approach, see George Rathjens, "Rethinking Nuclear Proliferation," in *Weapons Proliferation in the 1990s*, Brad Roberts, ed., (Cambridge: MIT Press, 1995), pp. 93-106.

norm against the possession of nuclear weapons²⁶ or b) the moral or political force of international law.²⁷

As with most things in life, it is doubtful that nuclear constraint can be attributed to just one cause or explanation. Nevertheless, these candidate explanations do not appear to be very promising. A full explication of their flaws requires a separate essay, so a brief survey is offered instead.

B1. The alliance explanation.

²⁶ On the taboo against the use of nuclear weapons, see Nina Tannenwald, "The Nuclear Taboo: The United States and the Normative Basis of Nuclear Non-Use," *International Organization*, 53:3 (Summer 1999); Richard Price and Nina Tannenwald, "Norms and Deterrence: The Nuclear and Chemical Weapons Taboos," in *The Culture of National Security: Norms and Identity in World Politics*, Peter J. Katzenstein, ed., (New York: Columbia University Press, 1996), pp. 114-152; Nina Tannenwald, "Stigmatizing the Bomb: Origins of the Nuclear Taboo," *International Security*, 29:4 (Spring 2005), pp. 5-49. Nehru's resistance to developing an Indian bomb and Japan's "nuclear allergy" are sometimes cited as examples of norm-driven behavior. On the Nehru, see Sumit Ganguly, "India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program," *International Security*, 23:4 (Spring 1999), pp. 150-151; Stephen M. Meyer, "Nuclear Decision Making in India," (Cambridge: Center for International Studies, MIT, 1981), pp. 5, 9. For a different view of Nehru, see George Perkovich, *India's Nuclear Bomb*, (Berkeley: University of California Press, 1999). On Japan, see, for example, Peter J. Katzenstein and Nobui Okawara, *Japan's National Security: Structures, Norms, and Policies*, (Ithaca: East Asia Program, Cornell University, 1993), pp. 165-171; Selig S. Harrison, "Japan and Nuclear Weapons," in *Japan's Nuclear Future*, Selig S. Harrison, ed., (Washington: Carnegie Endowment for International Peace, 1996), pp. 5, 14-18. Reiss, for example, maintains that norms -- what he calls "the general consensus against nuclear weapons" -- have been a contributing but secondary factor in nuclear restraint, particularly in the cases such as Sweden. Dunn credits anti-nuclear norms with anti-nuclear outcomes in "Indonesia, the Philippines, Singapore, Venezuela, Mexico, Chile, Egypt, Algeria, Nigeria, and Yugoslavia." Sagan argues that norms help explain why Ukraine gave up its nuclear weapons. Mitchell Reiss, *Without the Bomb: The Politics of Nuclear Non-proliferation*, pp. 263-265; Lewis A. Dunn, "Four Decades of Nuclear Non-proliferation: Some Lessons from Wins, Losses, and Draws," *Washington Quarterly*, 14 (Summer 1999), p. 7; Scott Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security*, 21:3 (Winter, 1996-1997), pp. 80-82.

²⁷ On treaty compliance, see, for example, Abraham Chayes and Antonia Chayes, "On Compliance," *International Organization*, 47:2 (Spring 1993), pp. 175-205; R. B. Mitchell,

The alliance explanation suffers from the fact that many alliance members sought nuclear weapons despite the presence of an alliance (e.g., the United Kingdom, France, Australia, Germany, Italy, China,) while other countries remained non-nuclear despite their lack of an alliance.²⁸ Moreover, at various points in U.S. history, American presidents looked favourably on the idea of a selective spread of nuclear weapons to allies. This was certainly true during the Eisenhower administration, which developed the concept of “nuclear sharing.” It was also true, though to a lesser extent, during the Nixon administration.

Looking back, one could even argue that nuclear alliances produce a countervailing contagion effect, i.e., being in an alliance with a nuclear power actually increases interest in acquiring nuclear weapons so that one can have equal or advantageous footing vis-à-vis the alliance hegemon and the other members of the alliance (e.g., the United Kingdom, Australia). In any case, the power of such alliances should have weakened after the fall of the Soviet Union (the point made by the international relations scholars who predicted a post-Cold War wave of proliferation), but a decade and a half later, this effect appears not to have taken place.

B2. The superpower pressure explanation.

The superpower pressure explanation is no less problematic. Obviously, the United States did not sufficiently pressure or punish France, the United Kingdom, Israel and other states that did acquire nuclear weapons. It is also unlikely, given the Cold War competition, that the United States would have kicked an important ally out of the alliance or crippled it with sanctions—an outcome that could only have been welcomed by the Kremlin.²⁹

“Regime Design Matters - International Oil Pollution and Treaty Compliance,” *International Organization*, 48: 3 (Summer 1994), pp. 425-458.

²⁸ One might also include India and North Korea, which went forward with nuclear programs despite treaties with the former Soviet Union.

²⁹ On the very day the President Nixon announced he would seek ratification of the NPT, he issued a National Security Decision Memorandum directing that American allies -- particularly, the West Germans -- not to be harassed over the treaty. What mattered in Nixon’s *realpolitik* was the Soviet competition and the alliance system, not international treaties. Seymour M. Hersh, *The Price of Power: Kissinger in the Nixon White House*, (New York: Summit, 1983), p. 148; Seymour M. Hersh, *Samson Option: Israel, America and the Bomb*, (London: Faber, 1993),

In specific cases, the pressure thesis has actually been disproved by the archival documents.³⁰ More generally, the pressure thesis is inconsistent with the record of NPT ratification. Many of the most important states did not ratify the NPT until the mid-1970s and 1980s—long after the treaty had opened. The United States either failed in its attempt to muscle states into the treaty or did not try. Given the foreign policy team in charge at the time, the latter is the most likely explanation.

This is not to suggest that pressure was never tried and never successful. There is a widespread belief that United States pressure did constrain nuclear programs in South Korea and Taiwan, though it must be said that neither country's nuclear history has been subject to systematic scholarly inquiry.³¹ As a general explanation, however, the pressure thesis has logical and empirical problems.

B3. The supply-side controls explanation.

Supply-side controls such as bilateral export controls and the efforts of the Nuclear Suppliers Group offer something of a paradox. Most analysts and policy makers list supply-side controls

pp. 209-210; Glenn T. Seaborg, *Stemming the Tide*, (Lexington, MA: Lexington, 1987), pp. 53-54.

³⁰ For example, American officials specifically stated they would avoid pressuring Australia over its nuclear program. National Archives II (NAII), Memo for the President, Subject: Your Meeting with the Prime Minister of Australia, April 29, 1969 (Secret), Memo for signature attached to memo from John P. Walsh, Acting Executive Secretary, to the Secretary of State, p. 1, Department of State Central Files, 1967-1969, Folder Pol 7, 3/1/69, Australia, Box 1842; NAII, Enclosure: Additional Talking Points, attached to Memo for the President, Subject: Your Meeting with the Prime Minister of Australia, April 29, 1969 (Secret), pp. 4-5.

³¹ On the South Korean and Taiwanese nuclear programs see Michael J. Mazarr, *North Korea and the Bomb*, (London: Macmillan, 1995), pp. 25-28; Don Oberdorfer, *The Two Koreas*, (New York: Basic Books, 1997), pp. 68-74; Reiss, *Without the Bomb: The Politics of Nuclear Non-proliferation*, pp. 78-108; Ta-you Wu, "A Footnote to the History of Our Country's 'Nuclear Energy' Policies," *Biographical Literature*, May, 1988, Translation from Chinese by ISIS; <http://www.isis-online.org/publications/index.html>; Joseph A. Yager, "Northeast Asia," *Non-proliferation and U.S. Foreign Policy*, Joseph A. Yager, ed., (Washington: Brookings Institution, 1980), pp. 47-81; Frankel, "The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation," pp. 48-51.

among the most important non-proliferation policy tools and yet virtually everyone agrees that dedicated proliferators can sidestep the obstacles they pose and acquire nuclear technology. Whether this is true or not is difficult to say, but one can point to cases (India in the 1970s, Iraq in the 1980s, North Korea in the 1990s) that seem to suggest that the system is rather porous. It is certainly hard to argue that supply-side controls offer a *general* explanation given a context in which nuclear technology and materials are increasingly available and when developing countries from Pakistan to the DPRK to Brazil and Iran are able to acquire at least elements of enrichment and reprocessing.

B4. The anti-nuclear norm explanation.

It is probably true that more people today subscribe to the idea that nuclear weapons are illegitimate than in previous decades. Of course the exceptions are also noteworthy, and they include large numbers of citizens in the official nuclear weapons states as well as in India and Pakistan, where nuclear weapons have become a powerful symbol that is often used to win popular support. Countries driven by a desire for recognition, prestige, or national status appear especially resistant to the anti-nuclear norm.

The major problem with the norms explanation, however, is not that the norm lacks universality or that it is a rather recent phenomenon (and thus cannot explain nuclear restraint for at least the first half of the nuclear age). The main problem with the norms explanation is that most decisions to pursue nuclear weapons are not made in public. They are almost always secret. Indeed, they are among the most secret activities that a state pursues. The public does not decide nuclear policy; it finds out about nuclear decisions after the fact. Moreover public opinion only matters if the country in question is democratic and even then, it is not axiomatic that opposition will translate into a change in policy.

B5. The international law explanation.

The international law explanation is most often offered by diplomats, lawyers, and legal scholars.³² It suggests that compliance with the NPT—despite the treaty’s flaws and despite a variety of external pressures—is a consequence of states’ respect for international law.

Governments feel a moral commitment or see it in their self-interest to abide by their international commitments.³³ As a moral or legal explanation, the invocation of international law raises a number of questions.³⁴ For example, state compliance with international law is uneven at best. Why does moral force or respect of the law apply to the NPT but not other treaties? In fact, scholars of international relations have suggested that regimes work best in

³² Among political scientists those who cite the salutary effects of non-proliferation regime are Rosecrance, Greenwood, Potter, Meyer, Quester, Smith, Reiss, Mandelbaum, and Sagan. In addition, both Chafetz and Solingen make regime-related arguments. On Rosecrance, Greenwood, Potter, Meyer, see Meyer, *The Dynamics of Nuclear Non-proliferation*, pp. 68, 102; see also Quester, "The Epistemology of Nuclear Proliferation," *Journal of International Affairs*, 40 (Summer, 1986), p. 178; Reiss, *Without the Bomb*, pp. 260-263 Michael Mandelbaum, "Lessons of the Next Nuclear War," *Foreign Affairs*, 72:2 (March-April 1995), p. 24; Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," pp. 76, 80-82; Glenn Chafetz, "The Political Psychology of the Nuclear Non-proliferation Regime," *The Journal of Politics*, 57:3 (August 1995); Etel Solingen, "The Political Economy of Nuclear Restraint," *International Security*, 39:2 (Fall 1994).

³³ On regimes in general, see Stephen Krasner, ed., *International Regimes*, (Ithaca: Cornell University Press, 1983); Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton: Princeton University Press, 1984); Robert Keohane, "Neoliberal Institutionalism: A Perspective on World Politics," in *International Institutions and State Power*, Robert Keohane, ed., (Boulder: Westview, 1989); Oran R. Young, "International Regimes: Problems of Conception Formation," *World Politics*, (April 1980), pp. 331-356; Oran R. Young, "International Regimes: Toward a New Theory of Institutions," *World Politics*, 39:1 (1986), pp. 104-122; Stephen Haggard and Beth A. Simmons, "Theories of International Regimes," *International Organization*, 41:3 (1987), pp. 491-517; Lisa L. Martin and Beth A. Simmons, "Theories and Empirical Studies of International Institutions," *International Organization*, 52:4, pp. 729-757.

³⁴ Scholars have identified other reasons that might explain the influence of regimes. Moravcsik maintains that states are drawn to regimes, because they dampen domestic political uncertainty. Barnett and Finnemore focus on the ability of international organizations to make rules and create social knowledge. Andrew Moravcsik, "The Origins of Human Rights Regimes: Democratic Delegation in Postwar Europe," *International Organization*, 54:2, pp. 217-252; Michael N. Barnett and Martha Finnemore, "The Politics, Power, and Pathology of International Organizations," *International Organization*, 53:4 (Autumn 1999), pp. 699-732; Martha Finnemore, "International Organizations as Teachers of Norms: The United Nations Educational, Scientific, and Cultural Organization and Science Policy," *International Organization*, 47:4 (Autumn 1993), pp. 565-598.

domains other than those having to do with security.³⁵ When it comes to issues of security, a state is seen as more likely to disregard moral and legal claims in favour of self-interest and survival.

C. Conclusion: A Missing Element.

To be clear, none of the objections raised against these explanations is fatal. No doubt all of them have contributed to nuclear restraint by some governments at particular moments in time. Nevertheless, they are all sufficiently limited that they do not amount to a compelling resolution of the puzzle, even if one adds them all together. Put another way, the explanations do not seem as strong as the puzzle.

This is a problem for both regime sceptics and regime advocates. If both sides acknowledge that the restraint of proliferation has been far greater and far more effective than anyone could have imagined, then this success must be explained. The problem is that neither non-regime based explanations favoured by regime sceptics (e.g., alliances and export controls) or the standard explanations favoured by regime advocates (norms, respect for international law) seem up to the task.

Something must be missing. In order to try to find out what it is, the next section looks to the process of nuclear decision-making. What does nuclear decision-making as a policy or political process, tell us about nuclear restraint?

V. The Primacy of Politics: the NPT's Influence on Internal Decision Making

³⁵ Robert Jervis, "Security Regimes," in *International Regimes*, Stephen D. Krasner, ed., (Ithaca: Cornell University Press, 1983), pp. 173-194. Indeed, the idea that the NPT is a successful security regime and thus an unexpected anomaly has been recognized by a few scholars. See Roger K. Smith, "Explaining the Non-proliferation Regime: Anomalies for Contemporary International Relations Theory," pp. 253-281; Harald Muller, "The Internalization of Principles, Norms, and Rules by Governments: The Case of Security Regimes," in *Regime Theory and International Relations*, Volker Rittberger, ed., (Oxford: Clarendon Press, 1995); Allison L. C.

This section outlines a political model of nuclear decision making and then uses this model to explain how the NPT achieved the success it has enjoyed. There is no attempt to prove the model—that will have to await another time—but there is an attempt to informally map out the logic of the model and provide illustrative examples. To set the stage, the section begins with a brief look at traditional approaches to thinking about non-proliferation.

A. Traditional Non-proliferation Analysis: Abstraction and Automaticity

Political science has traditionally been the academic discipline most concerned with nuclear decision-making and non-proliferation. Ironically, the chief characteristic of non-proliferation analysis, both past and present, is the absence of politics.³⁶ Indeed, most writing on the subject has been profoundly apolitical. Instead, nuclear decision-making has been treated as essentially a mathematical process, where the decision to pursue or forgo nuclear weapons is a function of security threats and technical capability.³⁷

At its heart this approach embraces abstraction and automaticity. Given a certain level of threat and sufficient technical prowess, the analyst posits that a country will “go nuclear.” Going nuclear is an outcome without a process. It is as if it happens by fiat, and the actors themselves play little if any role.³⁸

de Cerreo, "Nuclear Non-Proliferation: the Origins of a Security Regime," Paper presented at the 1994 Annual Meeting of the American Political Science Association, September 1-4, 1994.

³⁶ Some scholars have considered political variable. They point to the influence of competition for electoral advantage, what Solingen calls "coalition politics" and what Reiss refers to as "domestic pressures." On Sweden, Japan, and the role of domestic politics more generally, see Reiss, *Without the Bomb: The Politics of Nuclear Non-proliferation*, pp. 117-119, 249-251; Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," pp. 63-73.

³⁷ A recent US government commission on intelligence and weapons of mass destruction emphasized that one of the problems with American intelligence has been the failure to adequately account for political factors. The Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, *Report to the President of the United States*, (Washington: GPO, March 31, 2005), pp. 13-14, 173-175.

³⁸ For a review of writing on threats and proliferation decision making, see Stephen M. Meyer, *The Dynamics of Nuclear Non-proliferation*; William C. Potter, *Nuclear Power and Non-proliferation*, (Cambridge, MA: Oelgeschlager, Gunn & Hain, 1982), pp. 131-144; Peter Lavoy, "Nuclear Myths and the Causes of Nuclear Proliferation," in Zachary S. Davis and Benjamin

If the first irony is that this is political science without any attention to policy or politics, the second irony is that most analysts, when describing their own country's procurement or weapons decisions, seldom fail to consider policy processes and political factors. Is the American desire for missile defence purely a function of threat and capability? Many American analysts would say no. They might cite bureaucratic politics, the unique role of Ronald Reagan (and Edward Teller), political dynamics within the Republican Party, the timing and role of the Rumsfeld Commission, the 1994 Republican takeover of the American Congress, or Bill Clinton and Al Gore's desire not to feed a perception that Democrats are weak on defence. Some of these factors might be relevant, others not, but any analyst would be considered naïve if they looked only at threats and capabilities and ignored the role of organizations, the interests of individuals, and the workings of policy process. If those same analysts consider some *other* country's nuclear decision making, however, politics and policy are no longer considered relevant.

To be clear, the use of the word "politics" in this context is not restricted to, and indeed may not even include, *electoral* politics, i.e., the politics of winning votes or support from the electorate or public. Since most nuclear decisions take place in secret, most politics is not of the electoral variety. It is more likely to involve the politics of organizations, the politics between countries, and the politics among individuals, such as a prime minister or the head of the nuclear bureaucracy.³⁹

Frankel, eds., *The Proliferation Puzzle: Why Nuclear Weapons Spread (and What Results)*, (London: Frank Cass, 1993), pp. 193-199; Scott Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," pp. 54-86. In Meyer's survey of the literature, threat-related motivations were cited by eleven of twelve authors and constituted the most often cited reason for wanting the bomb. Perhaps the broadest claim comes from Thayer, who asserts that "security is the only necessary and sufficient cause of nuclear proliferation." Bradley A. Thayer, "The Causes of Nuclear Proliferation and the Non-proliferation Regime," p. 486.

³⁹ See, for example, Lawrence Scheinman, *Atomic Energy Policy in France Under the Fourth Republic*, (Princeton: Princeton University Press, 1965). For more recent assessments, see Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb." The historical sociology of technology offers a similar perspective, often blending organizational and constructivist elements. On historical sociology of technology and nuclear decision making see Steven Flank, "Exploding the Black Box: The Historical Sociology of Nuclear Proliferation," *Security Studies*, 3:2 (Winter 1993/94)); Tanya Ogilvie-White, "Is There A Theory of Nuclear

To point out that politics and policy processes, like non-proliferation success, have been consistently ignored is not to suggest that security and technical capacity are irrelevant. Both factors can be decisive. In several cases, security has been a major, if not *the* major, proliferation driver. This was likely true for Russia, China, Pakistan, and the initiation—if not the continuation—of the United States nuclear weapons program in the 1940s.

Security and capability variables should always be considered, but as explanations for nuclear decision-making, their reputation is greater than their explanatory power. Indeed, the problem is that a singular focus on these aspects of nuclear behaviour has crowded out other, often more promising, explanations. A myopic focus on security and capability has also led analysts to ignore cases in which countries with few threats and modest capabilities nevertheless pursued nuclear weapons or instances in which countries with ample threats and technical wherewithal abstained from nuclear weapons. To truly understand nuclear behaviour, including the surprising level of nuclear restraint, one must look to explanations unrelated to security: politics, pride, and the role of domestic and international institutions.

B. A Political Model of Nuclear Decision Making

A political model of nuclear decision-making could take many forms, but the one offered here begins with the fundamental premise that decisions favouring the acquisition or renunciation of nuclear weapons affect the interests and preferences of organizations and individuals. Decisions in either direction will benefit some (materially, ideologically, politically) and be costly to others.

A second, related premise—one which finds widespread empirical support—is that every country has a pro- and an anti-nuclear weapons constituency. This is not to suggest that the

Proliferation? An Analysis of the Contemporary Debate," *The Non-proliferation Review*, 4:1 (Fall 1996), pp. 43-60; and more generally, in the work of Donald MacKenzie and Thomas Hughes, as in Donald A. MacKenzie, *Inventing Accuracy: a Historical Sociology of Nuclear Missile Guidance*, (Cambridge: MIT Press, 1990); and Thomas P. Hughes, "The Evolution of

factions in any given country are of the same size or equally powerful, only that there are advocates on both sides of the issue. In some cases, these constituencies are well developed; in other cases they are “latent.” In any case, the country’s nuclear future depends on which coalition of constituencies is able to best use skill and chance to advance its agenda.

A political model does not imply that security threats or capability or alliances are irrelevant or unimportant. Instead, it suggests that these factors are *mediated* by politics and the policy process—that self-interested individuals and organizations understand, react to, and attempt to use context and events to their own advantage based on *pre-existing* attitudes about the desirability or legitimacy of these weapons.

In the political struggle between pro- and anti-nuclear constituencies, policy entrepreneurs on both sides will seek allies. Both will seek to expand or narrow the scope of the political battle to its benefit. In particular, they will seek to limit the composition of *decision group* in ways that favour their chances of victory.⁴⁰ Both will attempt to use external events or other “*agenda setting moments*” and “*policy windows*” to advance their policy agenda. For example, pro-nuclear advocates might use an unexpected nuclear test in another part of the world or provocative military behaviour by a regional rival to argue that the question of nuclear weapons should be “revisited.” Anti-nuclear advocates might similarly use the opening of a new arms control treaty and its support by an allied superpower to push the government to reaffirm its non-nuclear status. A change in government or in the leadership of a key ministry can also present an opening for advocates to press their agenda.

Large Technological Systems," in *The Social Construction of Technological Systems*, Thomas P. Hughes, Wiebe E. Bijker, and Trevor J. Pinch, eds., (Cambridge: MIT Press, 1987).

⁴⁰ The decision group is the set of actors that actually decides policy. Sometimes it is a committee (e.g., a prime minister and a defense minister or the cabinet); sometimes it consists of a single person. On the importance of influencing the composition of the decision group, see Schattschneider, who emphasized what he called the "scope" of political conflict. See E. E. Schattschneider, *The Semi-Sovereign People: A Realists View of Democracy in America*, (New York: Holt, Reinhart, and Winston, 1960).

Pro-nuclear advocates are advantaged by secrecy, a monopoly over technical information, and the seductiveness of nuclear technology. Opponents benefit from the institutional and economic demands of a nuclear weapons program, which are substantially more costly than a chemical or biological weapons program. As a percent of gross domestic product (GDP) or even of a mid-sized defence budget, nuclear-weapon programs are not particularly costly, but as with any *new* program, they are costly at the margin, i.e., they require funds *in addition to* all the other budgetary commitments made by a government.

A key strategy for pro-nuclear advocates is to “keep the option open.” This allows them to bide their time until that propitious moment when the inclinations of the head of state, the desires of the relevant ministries, and external events all converge in a way that produce a favourable policy opportunity. The advocates know that once the bomb is built, it is very difficult—though not impossible—to reverse course.

Conversely, opponents push for a terminal commitment such as joining the NPT, i.e., a decision to abandon nuclear weapons once and for all. They know that once such a commitment is made, it is very difficult—though not impossible—to revive a bomb program.

In short, nuclear decision-making is first and foremost a struggle between competing players and points of view. A nuclear weapons program does not happen magically on its own. Some organization or individual must *affirmatively push* for their policy preference. There must be a leader—a president, the head of the science or nuclear bureaucracy, an air marshal—someone who “owns” the issue and is willing to spend resources, political capital, and attention to see it through. Who are the likely leaders for such a cause? They are organizations that perceive that they have the most to gain from a weapons program or individuals who have a particular ideological or personal commitment to the idea of nuclear weapons.

According to this model, nuclear weapons decision-making is not unlike other policy decisions. Indeed, one could look at nuclear weapons as a kind of *procurement* decision—which of course it is. Military procurement has traditionally been viewed as a process that is drenched in politics

of all kinds. Of course, acquiring nuclear weapons represents a special case of procurement. It involves the highest level of government officials; it is secret rather than public; it involves the most destructive weapon in human history. Still, the similarities with other examples of procurement may make this analogy more helpful than misleading.

Viewed from the vantage point of a political model, the acquisition of nuclear weapons is primarily an issue of *political priority and sustainability*. Is there a faction or individual who cares enough about nuclear weapons that they will push the issue to the top of the policy agenda and help keep it there for the ten-plus years it will take to complete the project? When it comes to nuclear weapons, the engineering is more difficult than the science, program management is more difficult than the engineering, and the politics is more difficult than the program management. States that are successful in acquiring nuclear weapons do so, because they focus on it, because they make it a priority, and because they finish the job before external events like wars or changes in leadership derail the project.

Like any model, a political model of nuclear decision-making has its strengths, its weaknesses, and its limits. A prudent analyst or policy maker should use different models to analyze the same problem, taking what is useful from each perspective. One advantage of the political model is that it helps explain some of the more curious aspects of proliferation. For example, it can account for the fact that security threats are sometimes associated with pro-nuclear decision making but that nuclear renunciation does not require the absence or even a reduction in threat. Changes in political dynamics can also help explain *variation* in nuclear programs, in particular, the way in which bomb efforts seem to wax and wane despite the fact that threats and capability remain constant.

Perhaps most important of all, a political model helps explain the nuclear puzzle, i.e., the unexpected success in restraining proliferation despite a less than perfect treaty, unfavourable technological trends, and any number of crises. Exactly how a political model does this is described in the next section.

C. The Impact of the NPT on Internal Nuclear Decision Making

The power of the NPT is not that it addresses an individual country's security threats. It does not. The NPT's constraining effect does not depend on a universal respect for international law or adherence to a global norm. Instead, the NPT's success in restraining the spread of nuclear weapons is rooted in its power to reshape the internal politics of nuclear decision-making.

More specifically, the NPT constrained and influenced nuclear outcomes in at least seven different ways.

C1. The NPT required that governments make a public declaration of their nuclear intentions.

Unlike most houseplants, nuclear programs grow best in the dark. Unfortunately for bomb advocates, the NPT undermined one of their most important bureaucratic weapons: secrecy. Secrecy can be used by pro-bomb factions to influence those who participate in the policy process or to create a *fait accompli* that opponents find difficult to reverse.

Prior to the NPT, states were not obliged to reveal their nuclear intentions. With the NPT, countries had to *publicly* declare their posture. Of course, a country was not required to sign the NPT, but failure to do so brought unwanted attention, questions, and even suspicion.

Within the internal workings of governments, the NPT made a country's nuclear weapons status an open issue. Organizations and individuals that had a stake in the nuclear decision but had previously been shut out of the decision process by secrecy were now aware that the question was in play. The same was true for the public and for foreign capitals.

Secrecy was further undermined by the fact that once a country joined the treaty, it was obliged to make its nuclear activities more transparent, e.g., by submitting to inspection.

C2. The NPT reframed the nuclear issue.

In the decades prior to the NPT, the nuclear issue was a *defence* issue. As such, the major players were typically limited to the head of state and the military leadership (in some cases prodded along by an ambitious nuclear or science bureaucracy).

With the advent of the treaty, a decision about nuclear weapons was no longer simply a defence issue. It was now a *foreign policy* issue. Of course, issues of national security continued to play a prominent role in the deliberations, but now other factors had to be weighed as well: the attitude of superpower allies, regional relations, access to technology (Article IV), domestic public opinion, international public opinion and status, and so on. The nuclear issue was no longer “should we keep a nuclear option open?” but “should we sign a treaty to renounce nuclear weapons that other countries are signing?” The treaty had the effect of conceptually and politically transforming the nuclear question.

C3. The NPT influenced who sat at the table.

By reframing the nuclear decision, the NPT not only changed how the issue was evaluated but also who could participate in the decision, i.e., it shaped the composition of the decision group. It encouraged a decision group that extended beyond the prime minister, the military, and nuclear weapons scientists to include the foreign ministry, treasury officials, and others. In most cases, the effect of a) expanding the decision group and b) conceptually reframing the issue made it more difficult for pro-bomb advocates to prevail.

C4. NPT ratification created bureaucratic winners and losers.

Government, by its very nature, prefers the status quo. Policy actors wishing to change policy or pursue new policies usually have to exert more pressure to achieve change than those who prefer that an existing policy continue. Of course, change is not impossible; governments do alter policy, but change tends to be the exception rather than the rule—in part because the status quo enjoys a presumptive status.

Policies reinforced by treaty commitments can make it even more difficult for policy entrepreneurs, because the bar of presumption is raised to an even higher level. Again, reversal

is not impossible, but it requires that proponents of a different policy spend more political resources and witness even more extreme circumstances than would otherwise be required to help their cause.

This general phenomenon applies to nuclear decision making as well. A little cited but path-breaking paper by Rathjens, Chayes, and Ruina examines how the bilateral arms control process between the USSR and the United States affected the internal politics of American nuclear policy.⁴¹ A similar dynamic may be seen with respect to the NPT and a country's internal policy process.

Countries that wrestled with what to do about the NPT—and there were many—confronted two options: join the treaty and renounce nuclear weapons or stay outside the treaty and retain a bomb option. Keeping a bomb option did not mean *ipso facto* that a country would acquire nuclear weapons, but joining the treaty entailed a commitment to renounce nuclear weapons. Politically, these were asymmetrical choices, i.e., the decision to join the treaty was a more *final* decision. It left little ambiguity. It created clear bureaucratic winners and losers.

A state could invoke Article X and withdraw from the treaty, but that was a *legal* matter. As a *political* matter, having the issue decided and decided in a way that left little room for interpretation meant that pro-bomb forces suffered a major if not mortal defeat. Having lost, their chances of future victory were not zero, but they were not very high, and in any case, they were certainly lower than they were before NPT ratification. Acquiring nuclear weapons was a *politically* challenging and costly endeavour even without the treaty, but with the treaty, the hill that bomb-advocates had to climb became higher and steeper.

C5. The NPT took away the “keep the option open” rationale.

The all or nothing character of nuclear renunciation helped create clear political winners and losers, but this formulation had another effect as well. It took away one of the bomb advocates'

⁴¹ George W. Rathjens, Abram Chayes, and J. P. Ruina. *Nuclear Arms Control Agreements: Process and Impact*. (Washington, D. C.: Carnegie Endowment for International Peace, 1974.)

most useful survival tools. Pro-nuclear policy entrepreneurs who had found themselves in a hostile political environment were able to persist and fight another day by making the case for “keeping the option open.”

Hedging arguments are difficult for policy makers to resist, because they give the (false) appearance of costing nothing and providing flexibility for dealing with an uncertain future. From a political standpoint, however, a “keep the option open” policy was simply a way for pro-bomb actors to bide their time until a new election, a change in government, or external circumstances gave them a better opportunity to pursue their agenda. Not only did the NPT make bomb advocates political losers and thus put them in a disadvantageous position, it all but foreclosed the hope that they could prevail at a later time when political circumstances were more propitious.

C6. The NPT altered the character of post-ratification bureaucratic coalitions.

As indicated above, the NPT altered the political configuration of the decision group by framing the nuclear issue in a way that brought additional, mostly anti-nuclear, constituencies to the table. In other words, it helped reshape the *pre-ratification* political scorecard. Separately and perhaps equally important, the act of joining NPT shaped the *post-ratification* political landscape in a way that weakened pro-bomb advocates.

This effect was especially powerful in cases where militaries and nuclear bureaucracies had colluded out of mutual self-interest to support a nuclear program. Prior to ratification, a nuclear bureaucracy could dodge questions about the economics of civilian nuclear projects by a) using the military dimension of the program to invoke secrecy rules that advantaged their position and b) to push aside questions about cost by pointing out that their efforts had a national security dimension.

After ratification, the military might withdraw from the political coalition, leaving the nuclear bureaucracy to justify its ambitions on purely economic and civilian grounds—a task that was

often beyond their capability. This, in turn, would weaken the nuclear bureaucracy's political and programmatic position.

In the case of Australia, for example, the common nuclear agenda shared by the Ministry of Defence and the Australian Atomic Energy Commission (AAEC) fell apart after NPT ratification. Prior to ratification, the Ministry of Defence and the AAEC (and most especially its chair, Philip Baxter) had supported the common goal of a nuclear weapons capability and provided political backing for each other's programs and positions in various inter-agency deliberations. Following ratification, with weapons acquisition no longer a live possibility, the military saw no reason to support the AAEC's programs. As a result, the AAEC's projects were evaluated solely on the basis of economic viability. The combination of fewer political allies and heightened scrutiny proved too much. Outside of mining and materials, the Australian nuclear program was essentially halted. In short, the treaty helped break up the pro-nuclear alliance and, in doing so, severely weakened one of the advocates of nuclear acquisition. Both effects increased the likelihood of treaty compliance.

C7. NPT treaty commitments were progressive and sticky.

One of the NPT's greatest (and unrecognized) strengths is that it is dynamic. Unchanging general principles are encoded in the treaty itself, but the application of those principles is found in safeguards agreements, which have evolved over time. That evolution has been unidirectional: safeguards have only gotten stronger with each iteration. This process creates a situation in which states become inextricably entangled in progressively stronger constraints on their nuclear programs.

A given government might refuse to sign the treaty, but the treaty does not disappear. It patiently lies in wait. Eventually a government comes to power and decides to join the treaty, and then the country is committed. Moreover, the safeguards-arrangements that a government agreed to in 1975 are not the safeguards arrangements they have to abide by in 2005. An initial commitment to join the treaty makes it politically easier for another government to commit to

stronger safeguards. Having committed to those arrangements, it becomes easier to commit to still stronger safeguards.

This is not to suggest that all states have welcomed new safeguards. Indeed, those burdens are often resisted. From an aggregate or system perspective, however, the trend line is clear: serial commitments to progressively stronger safeguards. This result is, in part, a *political* dynamic. Commitments are settled policy. Acquiescence to new safeguards-agreements is consistent with that settled policy; it does not represent a new policy. And with each new commitment to a slightly stronger safeguards agreement, the bar is raised still higher for pro-bomb advocates.

In short, a single decision by one government can put a country on a track that, twenty years down the line, delivers it to a very different place. Particularly vivid evidence of this process could be seen at the 1995 NPT Review and Extension Conference. Many of the countries that originally expressed reservations about the treaty—Germany, Australia, and Italy, among many others—were now its strongest proponents. One only has to read the speeches from 1969 and compare them with the speeches from 1995 to see how dramatically the centre of gravity had shifted.⁴²

VI. Lessons (Un)Learned: the NPT's Past Success and Today's Non-proliferation Challenges

This inquiry began with the premise that policy makers should give special attention to past success. The paper then documented the ways in which the NPT has proven to be an unexpected but powerful constraint on the spread of nuclear weapons. In the previous section,

⁴² On Italy's nuclear past, see Cesare Merlini, "A Concise History of Nuclear Italy," *The International Spectator*, (Journal of the Istituto Affari Internazionali, Rome), 23:3 (July-September 1988); Leopoldo Nuti, "Italy and the Nuclear Choices of the Atlantic Alliance, 1955-63," in *Securing Peace in Europe, 1945-62*, Beatrice Heuser and Robert O'Neill, eds., (London: Macmillan Press, 1992); Steven J. Baker, *Italy and the Nuclear Option*, (Santa Monica: California Arms Control and Foreign Policy Seminar, 1974). On Germany, see Catherine Kelleher, *Germany and the Politics of Nuclear Weapons*, (New York: Columbia University

the reasons for that success were investigated and a new model, a political model, of non-proliferation was outlined. In this section, the contemporary challenges that confront the non-proliferation regime are inventoried and then re-evaluated given the lessons of past success.

A. Today's Non-proliferation Challenges

Despite the periodic lament that the non-proliferation regime is dying or dead, the NPT continues to constrain the spread of nuclear weapons. Nevertheless, the regime faces significant tests, some immediate and some further down the road. The list of dangers offered here is presented in no particular order.

1. Fuel cycle technology in general, Iran in particular
2. Nuclear terrorism and the problem of unsecured bomb material
3. Nuclear black markets and private networks
4. Resistance of the nuclear weapons states
5. Belief that the "NPT is no longer relevant"
6. Nationalism (e.g., United States, Iran)
7. IAEA's obligations versus its capacity

Students of non-proliferation are certainly familiar with some of the challenges on this list. Fuel cycle issues, that is, the problem of unconstrained access to reprocessing and enrichment technology, have been widely discussed. Similarly, the dangers posed by nuclear terrorism and nuclear black markets have been placed on most policy agendas as a result of the 9/11 attack and the activities of the Khan network.

Other items on the list are probably self evident even if they are not as widely discussed. The belief that the regime is no longer relevant undermines the regime, both because it may encourage some states to reconsider their nuclear options, and because it encourages other states

to take extreme actions that may serve to undermine the regime, e.g., preventive war, the development of new nuclear weapons.

The problem of the institutional capacity of the IAEA is not particularly sexy, but long-time non-proliferation officials and scholars know that the responsibilities of the agency have grown exponentially, while in general, its resources have remained the same.⁴³ So far, the effect of this gap has not made itself felt in a particularly dramatic way. Still, the situation is undoubtedly unsustainable in the long term. If the resource-to-responsibility imbalance is not addressed, then the agency will likely fail at some point, and its effectiveness will be called into question.

Other aspects of this list may be surprising. It appears not to mention North Korea or Israel. It does not include the problem most often cited by many American analysts: non-compliance and the need for enforcement.⁴⁴ And what is this business about nationalism?

Actually, North Korea and Israel are included. They are subsumed under number 4 along with India, Pakistan, and the recalcitrant “official” nuclear weapons states. Though they represent different kinds of problems,⁴⁵ what all these states have in common is a reluctance to give up their nuclear status, or as in the case of the United States and Russia, a desire to augment their nuclear status or the role of nuclear weapons in their defence doctrines. These countries’ nuclear

⁴³ See for example, MIT Working Group on Nuclear Materials Management, “Options for Preventing Illicit Trafficking in Fissile Materials,” (Cambridge: MIT Security Studies Program), 1995; Kaleb J. Redden, “Inspecting the Inspectorate: A Look at Financial and Political Support for the IAEA,” *Non-proliferation Review*, 10:3 (Fall-Winter 2003), pp. 34-47.

⁴⁴ The American focus on compliance is reflected in the statements of both officials and nongovernmental non-proliferation analysts. See, for example, Stephen G. Rademaker, Testimony, Hearing on the Nuclear Non-proliferation Treaty, US House of Representatives, International Terrorism and Non-proliferation Subcommittee, International Relations Committee, April 28, 2005, Congressional Quarterly; Jean Du Preez, Testimony, Hearing on the Nuclear Non-proliferation Treaty, US House of Representatives, International Terrorism and Non-proliferation Subcommittee, International Relations Committee, April 28, 2005 Congressional Quarterly; Michael A. Levi and Michael E. O’Hanlon, *The Future of Arms Control*, (Washington: Brookings Institution, 2005).

⁴⁵ With the DPRK, the issue is compliance with its safeguards obligations; with the “official” nuclear weapons states, the issue is compliance with Article VI; and with India, Pakistan, and Israel, the issue is their status as nuclear weapons states outside the treaty.

attachments have different effects. North Korea's nuclear weapons put proliferation pressures on other countries in the region. The pro-nuclear positions of the United States, and to a lesser extent Russia and China, make political agreement on ways to enhance the regime difficult if not impossible, e.g., lack of action on the so-called "13 Steps" enumerated in the 2000 NPT Review Conference.

Non-compliance and enforcement are not included, because they are not the *main* problem. In general, compliance and the current system of discretionary bilateral and Security Council enforcement have worked very well. Moreover, as suggested above, compliance has more to do with internal politics than mechanistic threats and penalties.

Nationalism is included, because there appears to be a very strong connection between nationalism and nuclear weapons. Nationalistic leaders—de Gaulle, Ben Gurion, Gorton, Nasser, Sukarno, Zia to name a few—seem to be the kind of leaders most interested in nuclear weapons. In addition, countries undergoing a nationalist wave seem most susceptible to the allure of nuclear weapons, whether it is India, the U.S. after 9/11, or Iran today. Nationalism often entails a desire for power and prestige, a reluctance to be constrained by multilateral agreements, and a "go it alone" defence philosophy—none of which are particularly conducive to non-proliferation. Countries caught in the grip of nationalism provide pro-nuclear advocates with a friendly environment in which to wage their political battles.

The response to these challenges—at least the ones that command public attention, such as the fuel cycle, terrorism, and black markets—has been to suggest various policy fixes, e.g., ban reprocessing, secure nuclear material, or arrest the marketeers. With rare exceptions, there has been little focus on *how* these remedies might be adopted. In other words, there has been virtually no discussion of the *politics* of these proposals and what is required if a diverse set of countries is going to cooperate in their implementation. The next sections provide a preliminary look at these issues. Before turning to the individual threats to the regime, however, attention is given to the lessons of the NPT for non-proliferation policy in general.

B. Lessons from the NPT Experience for Non-proliferation Policy in General

The success of the NPT and the non-proliferation regime offer a number of different lessons for policy makers. Before turning to the lessons, however, it is important to be clear about what is *not* a lesson.

B1. Treaties are not always the answer.

Given the analysis so far, it might be tempting to conclude that treaties are the answer to the problem of non-proliferation. Such a conclusion would be wrong, however. The NPT was one of the most important, if not the most important, development in restraining the spread of nuclear weapons. That does not mean that *going forward*, a treaty is always the answer. Under some circumstances it may be the appropriate policy remedy; on other occasions, it may not be. Treaties are comparatively blunt and rigid instruments. In rare instances, they can even spur proliferation behaviour.⁴⁶ They are best suited to the circumstances like those of the NPT, i.e., trying to influence the behaviour of a large number of countries all at one time and prohibiting or denying (rather than regulating) a technology. As it stands, virtually every country is already in the NPT, so the special utility of treaties may be somewhat limited.⁴⁷

Instead of focusing on treaties *per se*, it may be more useful to give attention to the underlying reasons why this treaty, the NPT, proved so effective. It is these more general lessons that may prove the most help to policy makers.

⁴⁶ This can happen, for example, because a treaty creates an agenda setting moment (i.e., nuclear policy is suddenly open for action) at a time when the decision group in power is tilted in favor of weapons acquisition. Australia's interest in nuclear weapons acquisition in response to the Test Ban talks provides one example. It has also been suggested that the CTBT contributed to India's decision to test in 1998. On Australia and the Test Ban, see Australian Archives (ACT): A5818/2, Robert Menzies to the Cabinet, Nuclear Tests Conference: Control Posts in Australia, Submission No. 1156, V6, p. 13 (Secret); Australian Archives (ACT): A1838/269, TS852/10/4/2/3; Letter from Prime Minister Menzies to Prime Minister Macmillan, 29th June, 1961, p. 1 (Secret). On India and the CTBT, see Dinshaw Mistry, "Domestic-International Linkages: India and the Comprehensive Test Ban Treaty," *Non-proliferation Review*, (Fall 1998), pp. 25-38. More generally, see Fred Charles Ikle, "Nth Countries and Disarmament," *Bulletin of the Atomic Scientists*, December, 1960.

⁴⁷ Nevertheless, the CTBT or the FMCT would certainly be welcome additions to the non-proliferation regime.

B2. Attention to internal politics.

The first and most important lesson is that those who wish to prevent the spread of nuclear weapons *must be attentive to the internal political and policy dynamics within states.*

The overwhelming tendency in non-proliferation policy making, particularly as regards American policy, is to assume that U.S. decision-making is the most important variable in proliferation outcomes. In the United States, both liberals and conservatives suffer from Beltway myopia. The natural consequence is to place less focus and therefore to know little and understand less about the political context in other countries, where the actual decisions are being made.

This first tendency helps foster a second that has the same effect. Non-proliferation supporters in the United States—officials, nongovernmental organizations, foundations, academics—attempt to craft non-proliferation remedies in the abstract without regard to the political consequences they will have in the countries they are trying to influence. This technical approach, which is not immune from national bias, often results in proposals that have no hope of adoption or that once adopted can even have counter-productive effects.

The irony is that non-proliferation advocates in the United States are extremely sensitive to the politics of non-proliferation policy in their own country (e.g., the president's popularity rating, how a legislator from Ohio has voted in the past, the state of interagency warfare concerning a particular proposal), and yet they know virtually nothing about the countries at whom their policy remedies are directed. If they took the same attitude towards U.S. policy making that they do to other countries, their colleagues would accuse them of being naïve, irrelevant, or even dangerous.

B3. Support non-proliferation constituencies.

If the first lesson is that policy makers need to understand the political and policy processes of nuclear decision making in countries they care about, then the second lesson is that they should

use this knowledge to *develop and strengthen the position of non-proliferation constituencies and/or prevent or undermine the development of pro-nuclear constituencies*. This is the fundamental principle that should guide non-proliferation policy. The distribution of powerful, informed, and active *domestic* non-proliferation constituencies—treasury officials worried about boondoggles, nuclear scientists who oppose military interference, army chiefs of staff sceptical of how nuclear weapons actually help the army rather than the air force, investigative journalists looking for a story, an anti-nuclear public, a prime minister or presidential candidate who has a long record of opposing proliferation—is the surest guarantee of preventing proliferation or, failing that, delaying or discovering the actions of a pro-nuclear faction.

This principle of developing and strengthening the ability of non-proliferation constituencies (and doing harm to their opponents) actually entails two different processes. *Building* or developing non-proliferation constituencies is one task. *Strengthening* the political position of existing non-proliferation constituencies so that they can prevail in their internal policy battles is a second and separate task. Both are important, but the focus here will be on the latter as it is directly related to the lessons of the NPT experience.

As noted earlier, non-proliferation constituencies can be helped or hindered by the way in which a nuclear issue is framed, e.g., weapons acquisition as a defence issue versus a foreign policy issue. Framing can define what factors are considered relevant to the decision and how they are weighted. In addition, framing has the absolutely critical ability to determine what parties get to participate in the decision. The objective should be to frame an issue in such a way that it maximizes the participation of anti-nuclear weapons constituencies in a manner that plays to their strength while at the same time minimizing the participation and political position of bomb advocates.

This is not a matter, therefore, of good public relations (which is nevertheless always welcome). It is not about deciding on some remedy or policy fix *ex nihilo* and then thinking like a political consultant to sell the idea. Instead, this is about designing or structuring the policy instrumentality in a way that it allocates benefits and costs so as to draw the attention of the

target constituencies and motivate their participation. After designing an instrumentality based on a political model, the task is to take that remedy and frame it in a way that maximizes its odds of success.

Article IV of the NPT, for example, helped recast the interests of some civilian nuclear bureaucracies from pro-bomb to pro-non-proliferation. Prior to the NPT, a struggling civilian nuclear bureaucracy might find the prospect of a weapons program a welcome solution to its budgetary woes. Article IV changed that when it specified that parties to the treaty would enjoy the fruits of nuclear technology. Some national nuclear organizations inferred that failure to join the NPT would result in a denial of access to nuclear technology. Fearing that the denial of nuclear technical assistance would doom their programs, some organizations switched allegiances and became treaty (i.e., non-proliferation) advocates.

This example is noteworthy both for the political dynamic it illustrates and because of the organization it highlights, namely, civilian nuclear organizations. Nuclear bureaucracies, along with armies and treasuries can be particularly important non-proliferation policy players. Civilian nuclear organizations can be critical “swing votes” in nuclear decision-making. They can be avid supporters of bomb projects for reasons of pride or bureaucratic self-interest. They can also side in favour of non-proliferation for reasons of morality or bureaucratic self-interest (e.g., fear of military interference in their scientific work). It is almost impossible to have a successful bomb program without a committed nuclear organization. (The historical record on military-only initiatives is not one of success.) Moreover, the nuclear bureaucracy has an information advantage over other bureaucratic players in terms of estimating whether a particular technological goal is achievable and at what cost.

Two other organizations merit mention, if only because they are so often overlooked.⁴⁸ One is the treasury. These keepers of the purse are genetically predisposed to oppose new spending

⁴⁸ More generally, potential non-proliferation constituencies may include the head of state, the foreign ministry, the army, the cabinet, the legislature, the trade or commerce ministry, the treasury, the civilian nuclear bureaucracy, the energy ministry, the scientific establishment, the nuclear industry, the business community, the mining industry, the private energy sector, the

projects, especially on something as exotic and risky as nuclear weapons. Historically, they have not been as powerful as they might be, however, because bomb advocates used secrecy to bypass their reviews, and because they lacked the technical information to properly assess the claims of pro-nuclear coalitions. Nevertheless, they are a natural non-proliferation constituency, and so it makes sense to a) create conditions in which they are likely to participate, and b) insure that they have the training and technical information to cut through the fog of the pro-bomb group's promises.

Another potential non-proliferation constituency is the army, as distinct from the air force or navy. Indeed, inter-service rivalry can be a powerful impediment to proliferation.

Unfortunately, it can be a powerful spur as well. For the soldier in the field, a nuclear weapon does nothing, except maybe kill him or her along with the enemy. From a soldier or general's standpoint, an extra tank or a better supply line has a more direct impact on the ability to prevail in battle. Moreover, if the money for a nuclear weapons program is drawn from operations and maintenance budgets, the soldier in the field actually does worse with a nuclear weapons program. Contrast the army's situation with that of the air force, which is likely to receive new planes and related resources in order to deliver the nuclear weapons, or to a lesser extent, the navy, which may hope to develop nuclear propulsion.

Of course, there are cases where any army has supported a nuclear weapons program.

Sometimes, a particular army chief is simply pro-nuclear. On other occasions, the army does not clearly see its self-interest and is log rolled by the other services. More often, the army is "bought off" with the promise of being the service that will be in charge of the nuclear program. At its worst, inter-service rivalry can encourage proliferation, as when each service demands and gets its own nuclear program.

health sector, environmentalists, journalists, universities, political parties, and the public. Those individuals or groups most likely to support nuclear weapons development include the head of state; the military and in particular the air force, occasionally the navy, the ministry of supply or the defense industrial organization, and the defense science board; the cabinet, individual science advisors), the civilian nuclear bureaucracy, nationalist political parties, and a nationalist public.

B4. There must be benefits in non-proliferation.

Implicit in the last two points is the notion that there must be benefits to non-proliferation. Certainly, there are costs, and therefore, there will be domestic players who oppose joining or extending the non-proliferation regime. These costs must be outweighed by the benefits, or more precisely, *the benefits of non-proliferation must be sufficient that they can catalyze the participation of enough non-proliferation advocates for non-proliferation policy to win.*

Benefits can take several forms: material, political, ideological, or social. Part of the NPT's success can be attributed to the fact that it provided or was perceived as likely to provide a variety of benefits, including everything from civilian nuclear assistance to membership in the club of responsible nations. Indeed, as is often said, the NPT was a bargain between nuclear weapons states and non-nuclear weapons states.

Today, that bargain does not have the luster as it did in 1970. To begin with, the nuclear weapons states have not followed through on their Article VI obligations, and the most powerful of the nuclear weapons states has blocked progress on the "13 Steps" of the 2000 NPT Review and Extension Conference. It also has to be said that civilian nuclear technology and in particular, nuclear energy, did not fulfil the promise or predictions of the 1950s. Energy has not become too cheap to meter. Most countries looking for cutting edge technology are likely to be more interested in information technology or biotechnology than nuclear power. Recently, there appears to be more interest in nuclear energy, but it is unlikely that it will ever yield the kind of benefits its promoters envisioned decades ago. Accordingly, it is imperative that the bargain be revitalized—that nations see material and other benefits that outweigh the material costs of safeguards or the economic costs or not siding with a powerful country that has pro-nuclear aspirations. A revitalized bargain may necessitate going beyond nuclear technology to other kinds of benefits, e.g., energy assistance in general, scientific technical cooperation, or more generic incentives.

The payoff for vigorously supporting non-proliferation should be high enough for at least a few states to take the non-proliferation mission as a national identity. Japan, the Nordic countries,

and Australia have, at times, taken on this role. Put another way, non-proliferation cannot solely be about restraining “bad” countries. If the regime is to strengthen over time, it needs its own advocates, countries willing to expend political energy for non-proliferation goals.

Finally, a non-nuclear status should be seen as a viable political strategy that has potential national policy payoffs for countries. Egypt, for example, rightly chose to forswear nuclear weapons and instead has affirmatively *used* its non-nuclear status as part of a political strategy to constrain Israel’s nuclear weapons program. This is exactly what non-proliferation advocates should want, but it is only sustainable if countries such as Egypt receive some satisfaction for their efforts. In this particular case, that means giving greater attention to the problem of Israel’s nuclear arsenal. In short, non-proliferation advocates should hope that more states see non-nuclear status as an effective alternative for addressing their security and political needs.

B5. Transparency.

As previously observed, secrecy tends to favour pro-bomb advocates, whereas transparency can advantage bomb opponents as well as provide the kind of early warning that will slow or complicate the pro-bomb agenda. Again, it is important to emphasize that success requires not only that non-proliferation constituencies are strengthened but also that pro-bomb entrepreneurs are put at the maximal possible *disadvantage*. To date, the history of NPT is the history of transparency qua safeguards agreements making life difficult for aspiring or potentially aspiring nuclear weapons states (e.g., Iraq post-1991, North Korea in the early 1990s, and Iran after 2002). Of course, formal arrangements are but one part of transparency. Investigative journalists trained in nuclear issues, environmental groups, legislatures, dissident groups, and evolving technology can contribute to broader and deeper transparency in a state’s nuclear affairs.

B6. Promote progressive commitments.

As discussed earlier, the continuing evolution and improvement in safeguards arrangements has resulted in a system that makes it more difficult over time for states to rethink their non-nuclear status. While few countries welcome taking on more obligations, history suggests that new

iterations of safeguards obligations will be steadily, if gradually, accepted by NPT member states, especially following a crisis or controversy over a problem state. Policy makers would be wise to continue to develop future safeguards standards—behavioural as well as technical—and thus further operationally and politically constrain pro-nuclear entrepreneurs. In short, leading states and NGOs should already be working now on whatever will follow the Additional Protocol in the future, even if member states are not yet ready to consider the new burdens it would entail.

B7. Conduct political diagnoses and watch for agenda setting moments.

Lists of potential proliferators are a staple of the non-proliferation business. In every decade since Hiroshima, analysts and academics have produced a scorecard of countries they believe are likely to be tempted by the bomb. Some of the countries turn out to harbour nuclear ambitions, some do not, and others not on the list have nevertheless pursued nuclear weapons. The basis for these assessments is almost always some combination of a country's technical capability (i.e., how advanced is their nuclear infrastructure) and an assessment of the security threats it faces. A political model of nuclear decision-making would suggest that these efforts should be supplemented by a different kind of exercise.

Rather than beginning with threats and capabilities, a political assessment would begin with a profile of the nuclear preferences of the key individuals and organizations, an assessment of their decision power or influence, and a map of the decision making process (e.g., who participates and when). Ideally, the analysis would include an inventory of past nuclear decision-making and/or a profile of potential future players in the policy process (e.g., following an election, a retirement, or a coup).

This application of the political model would be especially sensitive to future “agenda setting moments.” These agenda setting moments consist of occasions when nuclear policy becomes a live or actionable issue for a government. Typically, governments do not consider major changes in nuclear policy every day. Instead, proposals work their way up the policy process or are event-driven. For example, a nuclear test or a new nuclear treaty or a change in government

can be agenda setting moments—situations in which some set of players is called together to consider or reconsider a nation's nuclear policy. Focusing on the nuclear preferences of specific policy actors, the nature of the policy process, and the moments at which nuclear policy becomes subject to redefinition may provide a more powerful way to assess proliferation risks than a simple tally of reactors and enemies.

C. Lessons Applied to Today's Non-proliferation Challenges

This section began with a review of some of the more pressing challenges that confront today's non-proliferation regime. Having explored the lessons of the NPT's success for non-proliferation policy in general, the focus now turns to the application of those insights to those specific non-proliferation threats. Given limited space, two of the seven will receive special attention: fuel cycle issues and nationalism. These two, in particular, illustrate the potential value of the political model on nuclear decision-making.

C1. The problem of the fuel cycle.

The question currently confronting policy makers is how to persuade states to forgo what, under the treaty, they are entitled to, namely, access to reprocessing and enrichment for civilian purposes. The lessons of the NPT seem particularly well suited to this problem. First, consider the organizational politics of the fuel cycle. As it now stands, national nuclear organizations will likely oppose the renunciation of their country's fuel cycle rights, as this would represent a limit on their programs and possibly a decline in their budgets. To date, the only benefits offered for an alternative fuel cycle arrangement involve a guaranteed fuel supply, but this benefit accrues to the country as a whole, *not the domestic nuclear organization*. The national nuclear bureaucracy's opposition to renouncing the fuel cycle will likely be supported by any elements in the country's military that still harbour nuclear ambitions or who hope to acquire a hedge in the form of a complete fuel cycle. Add to that the fact that some of the countries most interested in a fuel cycle are in the midst of a nationalist phase (e.g., Iran), and it should be no surprise that hectoring by the United States and others about the dangers of the fuel cycle has not changed many minds.

Success on the issue of the fuel cycle will require that domestic nuclear bureaucracies perceive a reason, a benefit, in giving up something they view as valuable. Success will also be more likely if incentives are offered that broaden the scope of participation to include treasury officials and foreign ministries.

More generally, the entire issue has to be reframed. The current formulation plays badly for non-proliferation advocates insofar as the issue is seen in many quarters as one of a) protecting rights granted under a treaty and b) yet another attempt by rich countries to deny technology to poorer countries in a way that is discriminatory. These are two powerful emotional and political rationales for the pro-fuel cycle faction. The anti-fuel cycle faction, by contrast, must rely on what must seem like vague concerns about a proliferation danger in a distant future involving countries that have already pledged to forgo nuclear weapons.

Supporters of non-proliferation would do well, given this context, to avoid the U.S. tactic of public pronouncements of technology denial that likely come across as coercive and unilateral. Such pronouncements only confirm the sceptics' doubts about the true objectives of fuel cycle reform.

A better strategy would be to reshape the debate—perhaps from proliferation to energy and development—and come up with a new package that promises energy benefits to participating countries and provides national nuclear organizations with a reason to participate. This energy initiative would extend beyond nuclear technology alone, i.e., the nuclear component would be subsumed into a broader concept. This would bring new organizational constituencies into the decision process and would remove the “rich versus poor” frame in which the issue is now entangled. The focus of the package would be energy development and assistance, but one of the requirements would be a suspension of the right to reprocessing and enrichment. Presumably, the number of takers would be small at first, but if they were well rewarded and there was a deadline for joining, other states would likely follow course rather than be left out. If the deal were to combine larger benefits up front with progressive commitments to non-proliferation over time, countries might be drawn in and then find it hard to reverse course.

C2. The problem of nationalism.

Nationalism poses an extraordinarily difficult and dangerous challenge for non-proliferation. Most countries go through nationalist periods, and so it is especially important for non-proliferation advocates to be clear about the most appropriate tactics for responding to nationalism so that the risks of proliferation are kept to a minimum. Here again, the experience with the NPT provides some useful guides.

Virulent nationalism provides bomb advocates with a permissive political environment. The heady passion of nationalism can lead officials to favour policies for which the costs are higher than the benefits, even when their own organizational or personal self-interest suffers as a result. Under these conditions, a strategy based on eliciting the support of specific non-proliferation constituencies is less likely to yield positive results. Indeed, expanding the scope of the internal battle over nuclear policy may actually result in a stronger pro-bomb coalition.

Instead, a political model of nuclear decision-making would probably point to three other alternate approaches. The first is to simply wait for the fever to pass. Do not press ahead with non-proliferation strategies that force the issue, i.e., create agenda setting moments that result in policy choices that become fixed policy. Doing so will likely produce outcomes that are the opposite of what is being sought and put domestic non-proliferation advocates in a worse position. The history of the NPT was not that all countries joined the treaty once it was open for accession. Many countries waited years, even decades before joining. Once in the treaty however, bomb advocates found themselves progressively constrained from pursuing their goals.

A second but more challenging tactic is to reframe the non-proliferation debate in such a way that a commitment to non-proliferation is consistent with nationalism, e.g., that the country in question receives status benefits or enhanced prestige as a consequence of their actions. South Africa enjoyed something akin to this following the voluntary dismantlement of its weapons program. It might be argued that Japan, Sweden, and Egypt have enjoyed some status benefits for being leading voices in opposition to nuclear weapons. In this context, it is worth

remembering that benefits need not be restricted to material goods such as aid or energy projects. Social benefits can also be used as incentives. A leadership position in an international forum, hosting a visit from the president of the United States, high profile individual appointments, or even awards can confer the respect and prestige that nationalist policy makers seek.

Finally, international non-proliferation advocates would do well to avoid public condemnation of countries undergoing a period of nationalism. Such criticism will only intensify feelings of nationalism and undermine the ability of indigenous non-proliferation advocates to positively influence domestic debates.

None of these options is easy or very satisfying, but sometimes not fighting is better than fighting and losing. A political model of decision-making highlights the fact that timing does matter. More generally, international non-proliferation advocates need to be able to recognize when the moment is right to push ahead (e.g., in the wake of a crisis when the appetite for action is high) and when to be patient. Like a good politician, they need to be able to count votes, to force the issue when they are ahead, and to delay when they are not.

C3. Other threats to the regime.

The lessons of the NPT and a political model of nuclear decision making have implications for the other threats facing the regime as well. As regards the security of nuclear materials and nuclear terrorism, for example, the importance of benefits and finding organizational allies would seem to be relevant. The NPT experience would also appear to suggest that it is preferable to prohibit something rather than regulate it, and thus the desirability of proposals for a “global cleanout” of special nuclear materials, a fissile material cut-off treaty, or the establishment of “fissile material free zones.”

Another example is the resistance of nuclear weapons states. Consider the United States. A political diagnosis of the problem would point to the need to decouple the national nuclear laboratories’ and Department of Defense’s organizational interest in maintaining or even expanding nuclear arsenals. Already, some voices in the Pentagon have begun to complain that

nuclear weapons inhibit the ability of the American military to achieve other important objectives, e.g., when budgets are tight and well equipped troops are more important than a nuclear warhead. In each of the weapons states, the political landscape will be different, but international non-proliferation advocates need to address the material, political, and social incentives that foster resistance to non-proliferation and disarmament—that is, finding ways to reshape the incentive structure and then preparing for and acting when a favourable agenda setting moment presents itself.

D. Limits to the Lessons

The lessons of the NPT and the related insights of a political model of nuclear decision making can substantially improve the prospects for future non-proliferation success, but nothing said here should be interpreted as suggesting that these are magic bullets or that other non-proliferation tools and perspectives can be tossed aside. The problem is sufficiently complex and the individual circumstances sufficiently diverse that no one approach or tactic will be enough. So for example, the political model, while still useful, is less robust when applied to the problem of nuclear black markets than it is to the problem of the fuel cycle.

There are other limits as well. Many of the dynamics described here may work more effectively vis-à-vis democracies than authoritarian states, though it must be emphasized that authoritarian states have organizational factions and politics. Moreover, some of the countries on non-proliferation watch lists—Taiwan, South Korea, Brazil, and Japan—are democracies. Still, every model has its limits and will perform better in some environments than in others.

The key point, however, is that ignoring the success of the NPT and the political model of nuclear decision-making is a serious error. Today, the danger is not that non-proliferation specialists will so narrowly focus on the NPT and political factors that they will ignore security and technical variables. No, the more likely mistake—one widely observed in the past and present—is that they will wholly focus on the latter to the exclusion of the former.

VII. Conclusion: The Three Questions

This inquiry began with three questions. Has the NPT been a success? Why has it been a success? What does this success tell policy makers about how to restrain (and even reverse) the spread of nuclear weapons, and in particular, how to approach the contemporary challenges that face the non-proliferation regime.

The answers provided have been somewhat unconventional. Despite the doom and gloom coming from many quarters, this analysis maintains that, by most any standard, the NPT has been an unexpected and unheralded success. In addition, it has been suggested that much of this success can be traced to the impact of the NPT on the internal policy processes of states, and that if that success is to be preserved and even expanded, policy makers must focus on the development and strengthening of indigenous non-proliferation constituencies, attention to agenda setting moments, as well as the use of transparency, incentives, and an ever evolving application of non-proliferation instrumentalities.

It is also worth noting what this paper does not say. It does not suggest that because the NPT was able to work non-proliferation magic, new treaties are necessarily the most important tools in the non-proliferation toolbox. It does not declare that just because the NPT has been a success everything is rosy. Indeed, it identifies a number of threats to the regime, some commonly cited, others less so. Finally, the analysis does not contend that security and technical capability are unimportant and never decisive.

What is suggested, however, is that a myopic preoccupation with security and technical capacity has diverted attention away from other equally important considerations, particularly the role of politics and the importance of nationalism. More generally, this paper has attempted to offer a different way of thinking about the problem of proliferation and alternative approaches to restrain and reverse it.

Finally this paper ends where it began—with the question of success. It has insisted that the phenomenon of success is important, that it has been systematically overlooked and undervalued,

and that if policy makers and scholars continue to ignore the reality in front of them, they will put the regime and global security at even greater peril.

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